VOL.1, NO.3 • NOVEMBER 1984

MicroTimes™

California's Computer Magazine

THE CRACKER SPEAKS:

Hacker Busted by FBI Tells All

Also:

HALCYON
Interactive Laserdisc System

Christmas Product Guide

The Computer Colorworks

Plus:

Reviews,
User Group Listings,
More

Illustration: Paul Anderson

FREE

ServiceWORLD

YOU ARE INVITED TO JOIN US FOR FOOD & DRINKS AND

OUR FREE COMPUTER INFORMATION SEMINARS

Find Solutions To Your Information Processing Needs On:

MULTIFUNCTION BOARDS, MODEMS & MONITORS — **NOV 10**

SOFTWARE and PRINTERS: — **DEC 1**

EPSON, NEC, DIABLO, OKIDATA/FRAMEWORK LOTUS, D BASE III

HARD DISKS: IOMEGA, SIGMA, TALLGRASS, MOUNTAIN — **DEC 18**

10 a.m. - 4 p.m. each day

Each seminar will have a DRAWING for attendees

Prizes include: Keytronics Keyboard, Amadek 310A Monitor, 1 year maintenance contract for your computer, Hercules graphics card

10% off **any** maintenance agreement with this coupon

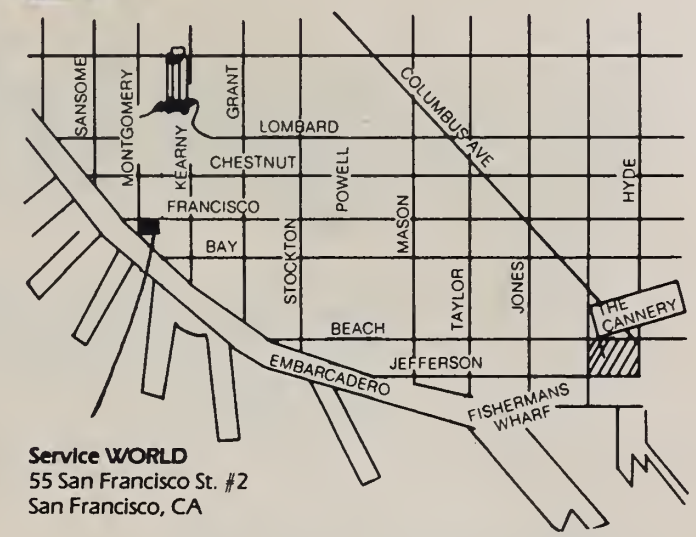
5% off **any** computer product with this coupon

There's a **WORLD** of On-Site

408-998-3100

Delivers....

For information
on Seminars call:
James Cross or
Jean Nolan



Service WORLD
55 San Francisco St. #2
San Francisco, CA

...Products to enhance your computers and profits

On-Site Service means **FREE DELIVERY AND INSTALLATION is standard** whether you're buying memory chips or printers, multifunction boards or monitors.

On-Site Service means free diagnostic testing with every delivery/installation. And look at these low prices and special discounts:

MEMORY UPGRADES SPECIAL

256K RAM for only	**$199**
64K RAM for only	**$59**

PRINTERS

Epson FX-80 160 cps 80 column dot matrix	**$499**
Toshiba P1351 200 cps near letter quality	**$1695**
Okidata 93	**$799**
NEC 5500Q 55 cps 16k buffer	**$1695**
NEC 7700Q w/cut sheet feeder 55 cps 16k buffer	**$2795**

MULTIFUNCTION/EXPANSION BOARDS

Quadram 384k Multifunction board w/64k	**$299**
AST Research Sixpak Plus w/64k	**$309**

HARD DISK DRIVES

Tallgrass 20/20 hard disk and tape backup	**$2795**
Mountain 27 tape file backup	**$1795**
IOMEGA Bernoulli Box 20 meg	**$3395**
IOMEGA Bernoulli Box 10 meg	**$2295**
Everex 10 meg half height	**$995**
DYSAN DISKETTES: DS DD	**$39.95**

HAYES MODEMS

Smartmodem 1200 external	**$549**
Smartmodem 1200B internal	**$499**

We also have on site maintenance contracts at affordable rates: and multiuser discounts

Service at ServiceWORLD

415-788-6580

CONTENTS

In this month's cover story, MicroTimes interviews Bill Landreth, a youthful hacker whose adventures with GET's Telenet system landed him in difficulties with the FBI. Landreth candidly discusses his activities and offers advice to those thinking of following in his footsteps.

In other stories, intrepid heroine Jina Bacarr discusses her latest heartthrob, an interactive videodisc system known as HAL; MicroTimes offers suggestions for the computer-minded Christmas shopper; and Ken Goehner visits the Computer Colorworks and discusses their new Digital Paintbrush.

In response to our feature on Computers and Health (last issue), we received a letter from Michael J. Skaar of Ergonomic Computer Products which stated in part: "The 'Well-Designed Terminal Workstation,' as described by Dr. Thomas Kopan, Behavioral Optometrist, . . . has not been agreed upon as 'well designed' by anyone in particular, other than Dr. Kopan. . . . Dr. Kopan presented one opinion; there are many other valid opinions from leading experts around the world to be considered. . . We would also like to add that Dr. Kopan's comments describe a workstation which is far better than average, and provides a good starting point."

MicroTimes welcomes your comments on this or any other issue. In order for use to be useful to you, the reader, we need your input and ideas about our current features and suggestions as to what you'd like to see in future issues. Let us hear from you.

6 Edit Mode
Editor-in-chief Don Hamilton offers some advice to would-be buyers of educational software.

8 HAL Comes Home *by Jina Bacarr*
Dauntless Jina Bacarr reports on her close encounter with the HALCYON interactive laserdisc system in this first installment of our ongoing series, *Sweet Savage Byte.*

12 Christmas Product Guide
by Don Hamilton and Kim Nelson
Some holiday suggestions for the computer user on your list.

16 The Cracker Speaks
by Don Hamilton and Mike Markowitz
MicroTimes visits Bill Landreth, whose hacking adventures led him to the Telenet system and the notice of the FBI.

20 John Osborn and the Computer Colorworks:
Filling the Niches *by Ken Goehner*
An ongoing quest for new applications for computer technology from a man whose inventions range from medical lifesaving devices to the new Digital Paintbrush.

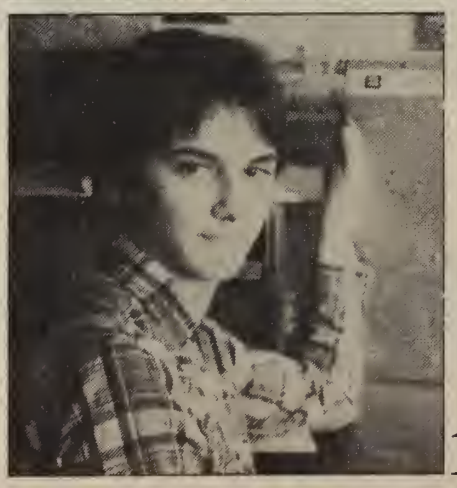
24 Reviews
Word Processing Primer, Part II; plus reviews of hardware, books and software for business, education, and fun.

28 Classifieds

30 User Group Notes

8

12



16

MICROTIMES
California's User Oriented Computer Magazine

Editor-in-chief
DON HAMILTON
Editor
MICHAEL MARKOWITZ
Managing Editor
KIM NELSON
Assistant Editor
MARY EISENHART
Business Manager
PAT HAMILTON
Staff Writer
PAMELA PESCARA
Contributing Writers
JINA BACARR, GORDON BRUCE, DON DEATHRIDGE, RANDY DENNIS, ALLEN DOUM, BENNETT FALK, VAL FISH, WALTER GRAMS, JOHN GRESHAM, DONNA MCGRUE, DOUG PENCILLE, DICK ROWELL, ED SHURTLEFF, DOUG WALKER
Contributing Photographers
RICHARD MCCAFFREY, JANE MOORE

BAM PUBLICATIONS, INC.

Publisher
DENNIS EROKAN
Associate Publisher
MILES HURWITZ
Advertising Director
JOE AMADEO
National Account Representative
CAROL OPPENHEIMER MEDIA
Assistant Advertising Directors
STEVEN GELLMAN (Los Angeles)
CHUCK STANLEY (San Francisco)
Advertising & Promotion
SUZIN COLEMAN, LINDEE COX, JOHN LOCKHART, JEFF ROSENFIELD, STEVE SHOEMAKER, JON YOFFIE
Advertising Assistants
LISA MALOY (Los Angeles)
CAROL PRIEST (San Francisco)
Production & Distribution Manager
JOHN EROKAN
Distribution Staff
RAND CROOK, ART HOLLAND, ELIOT KLEINBERG, KIRK LANIER, JOSEPH RAFALO, PETER SCANDALIS

This Vol. 1, No. 3, Nov. 1984. Whole No. 3 Microtimes, California's User Oriented Computer Magazine, is published by BAM Publications, Inc., 1800 N. Highland, Hollywood, CA 90028.

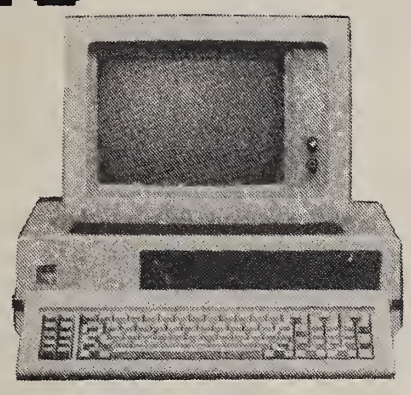
Microtimes™ is © 1984 by BAM Publications, Inc. Subscriptions rate: 12 issues, $12. All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. Unsolicited material is gratefully accepted, but we can't be responsible for returning it unless it is accompanied by a stamped, self-addressed envelope. The staff and management of Microtimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

We Discount Everything But Service

IBM-PC

256K RAM MEMORY
TWIN 360 KB DRIVES
IBM KEYBOARD

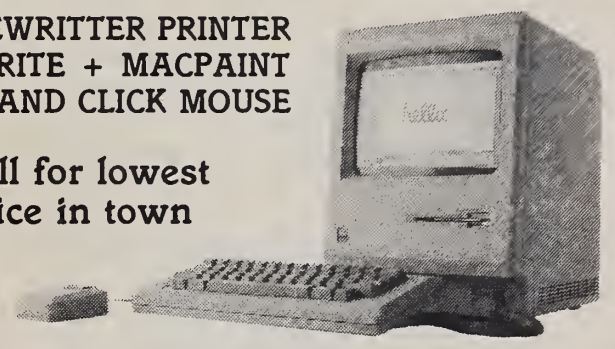
$1499.00



MACINTOSH

IMAGEWRITTER PRINTER
MACWRITE + MACPAINT
POINT AND CLICK MOUSE

$ Call for lowest price in town



APPLE

ALS CPM/ CARD 64K	$275
Amder Color 1	275
Drives for Apple	145
Micromodem IIe	249
Hayes MACH III	39
Fans	45

IBM

A.S.T. Six Pack w/64K	$269.95
Quadram 384K w/ok	219
IBM High resolution composite	119
IBM Monochrome Monitor	159
IBM Color Card	205
IBM Mono Card	225
2nd Drive	169
RAM Chips set 9	40
D Base III	395

ACCESSORIES

Dynax DX-15	$389
Gemini 10 X	259
Okidata 92P	419
Paper 3000	24.95
DS DD Disk	19.95
DOS 2.1	59
Hercules Color Card w/ PAR. POR.	210
10 MG Hard Disk	795

"WE HAVE MACINTOSH SOFTWARE IN STOCK!"

Complete selection of the best selling software for home and business

RECREATIONAL

Flight Simulator
Millionare
Zork I
Summer Games
Zork II

BUSINESS

Symphony
1 2 3 Lotus
Pfs File
Multiplan
D Base III

unicomm™ INC.

18639½ Ventura Blvd Tarzana (818) 996-5722

Mail Order Prices, Convenient Boulevard Location.

Trade-ins Welcome

Cash prices only • Limited to stock on hand

EDIT MODE

EDUCATIONAL PACKAGES

Judge them carefully

Not all programs that claim to be educational are really valuable, and a lot of programs that are not advertised as educational turn out to be just that. A fun game can also be very educational.

A game can make an adult feel at home and at ease on the computer. On the other hand, some of the children's educational games are so abstract that I pass over the obvious. My son hits keys until something happens and he finds the controls I couldn't. At this point, I reflect on all the times I told him not to touch "any other keys" while running a program. My fear was that he might re-boot, or even worse, kill a disk. Am I stifling his creativity? I have been called to our computer room several times to a sad wail of "What happened? I was about to kill the evil wizard and save the princess when all this strange stuff suddenly appeared on the screen." He had inadvertently rebooted (a little keyboard magic).

When purchasing educational programs, we all become teachers and must accept this inherent responsibility. Listed below are some of the elements I think should be considered when buying computer educational programs. Remember that some hardware purchases may improve the teaching quality of a program and, therefore, justify the cost.

Graphics

Great graphics will hold everyone's attention. Small children will stop to stare at a screen filled with fast-moving scrolling graphics. However, graphics are not a prerequisite for a great game. Some of the best role-playing games, which can be extremely educational, have no graphic capability.

Graphics can be a simple honey bear pulling letters into their proper position as a child plays Koala's spelling game (*Koalagrams Spelling 1*), or as complex as the horizon rolling over and over in Sublogic's *Flight Simulator* game, as you spiral out of control over the California desert on your maiden flight.

Are graphics really important? The answer is "sometimes." At least, they can attract attention to the area of the screen that the programmer wishes to emphasize. *Lotus Tutorial* is an excellent example. You are asked to enter a change and watch the results. The resultant change is highlighted in a visually stimulating display of color which draws your attention to the area of the screen to be highlighted.

For younger children, graphics are probably very important. The older children and adults who can read will not need extensive graphics. Very sophisticated computer users will be bothered by simple (old fashioned) graphics. Less sophisticated computer users will enjoy a simple Pac-Man style toothbrush game like *Placqueman* by Homecomputer. If graphics are included, they should have an express purpose.

Person to Computer (Joystick, ball controller, touchpad, light pen, mouse, or keyboard)

You should consider the cost of additional required hardware when considering educational software. The keyboard almost always comes free with your computer. Most people have no problem using the keyboard if the program is properly designed.

Flight simulators are much easier with a joystick and give the tactical feel of aerial controls. Moving the cursor around a screen through menus can be much easier with a mouse. For younger children, a touch pad or light pen may be easier to operate than a mouse. The age and experience of the user should always be a paramount consideration.

Each peripheral has its place, and if several educational packages are purchased which require the use of one of these systems, the cost can be amortized over all packages.

Program Retrieval

Young children may require adult supervision when loading and unloading disks. They can think of many creative ways to treat a disk, none of which the teacher (or household financial officer) would appreciate! The disk-based storage system can be an advantage because you can store more than one program on it and retrieve programs rapidly compared to tape systems. These multiple programs, when combined with a menu system, can be called from the disk by a child by selecting the appropriate name of the program. Students can then select programs without the teacher's assistance, other than initializing the disk in the beginning. The best system for young children would be a cartridge system (push it in, turn it on). Unfortunately not many educational cartridges exist.

Some computer systems will load a menu automatically. Others will not. In this case, some familiarity with computers would be beneficial. Most programs come with some simple explanation of how to start the program. However, on occasion, I have read most of the way through an instruction book before finding the "load" instructions. This can be an arduous and frustrating task for a youngster. Before you buy, think about *who* will be using the system and how much help they may require.

Learning the System

Are there a 100+ pages of instructions? You may be one of the minority who likes giant instruction books, but most people just want the program to load and run. It is irritating not to be able to get past some simple trick because the instructions are lacking or hidden somewhere in a voluminous bible of instructions. On the other hand, it's great to have the program be so obvious that you don't have to read anything!

If the program has menus, can you zip through or bypass them completely after you understand the system? Once again, consider the environment and who will be using the program.

Age Group, Educational Level and Sophistication

Very sophisticated computer users will be bothered by simple systems, while the inexperienced and young are likely to enjoy them. Challenge is important to all users, but too much challenge in the beginning is threatening.

One of the attractions of computers is that they will tirelessly work with an inexperienced learner, if the student and program are properly matched. You learn by doing. People enjoy learning when they are allowed to learn at their own pace. They learn rapidly if they have the positive reinforcement offered by the easy to master but challenging programs. Some of our most experienced game and educational reviewers will pan a system only to find that the kids loved it. If they like it and learn from it, you've made a sound investment.

— Don Hamilton

Wall To Wall Fun For All
Savings On Learning Software!

Improve Comprehension While You Read More in Less Time

MICROSPEEDREAD™ Uses Proven Strategies, Easy-to-use Techniques

NEW!

CBS SOFTWARE

4 Disk Computer Program for APPLE® II+/IIE IIC
2 Disk Computer Program for Commodore 64,™ IBM™-PC/PCjr

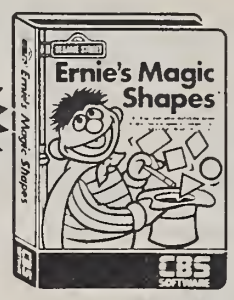
MFRS. LIST 125.00

Our low everyday price . . . **$82.97**

ERNIE'S MAGIC SHAPES™* Combines Fun and Learning

A Color and Shape Matching Game with The Magic of SESAME STREET™

NEW!



CBS SOFTWARE

Disk Computer Program for Commodore 64™
Cartridge Computer Program for Atari,® Commodore 64™
Cassette Computer Program for Atari®

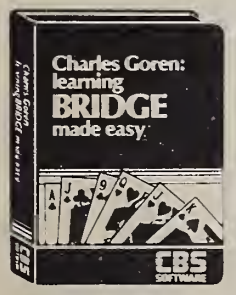
MFRS. LIST 27.95

Our low everyday price . . . **$18.97** Atari (cass.)

Your low price may vary by machine and/or format.

Learn Bridge From International Expert Charles Goren

Through Your Computer, Goren is at Your Elbow As You Learn or Improve Your Game



CBS SOFTWARE

Disk Computer Program for APPLE® II+/IIe, IIC IBM™-PC, Commodore 64™

MFRS. LIST 79.95

Our low everyday price . . **$52.97**

MATCH-WITS™ Challenges Your Concentration, Memory, Skill

Includes User-Programmable Feature to Create Your Own Game Categories

CBS SOFTWARE

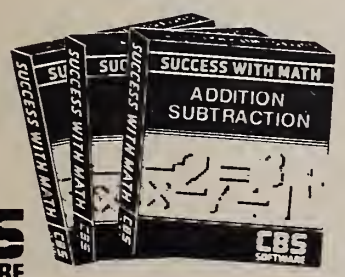
Disk Computer Program for IBM®-PC/PCjr., Commodore 64™ Atari®

MFRS. LIST 29.95

Our low everyday price . . . **$19.97**

SUCCESS WITH MATH™ For All The Students In Your Home!

Classroom-tested Math Computer Programs— Elementary through High School Levels



CBS SOFTWARE

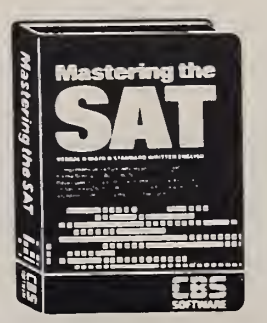
Disk Computer Program for APPLE® II+/IIE, IIC Commodore 64,™ Atari®

MFRS. LIST 24.95

Our low everyday price . . . **$12.97**

Improve Your SAT Scores!

Computer Turns Tutor to Help College-Bound Students



CBS SOFTWARE

4-Disk Computer Program for APPLE® II+/IIe, IIC IBM™-PC/PCjr., Commodore 64™

MFRS. LIST 150.00

Our low everyday price . . . **$79.97**

Sale limited to stock on hand. Ad items subject to prior sale.

THE WHEREHOUSE

WE'VE GOT FLOPPY DISKS AS LOW AS **$1.49** PER DISK

Wall To Wall Fun For All

AVAILABLE AT SELECTED LOCATIONS!

SWEET SAVAGE BYTE

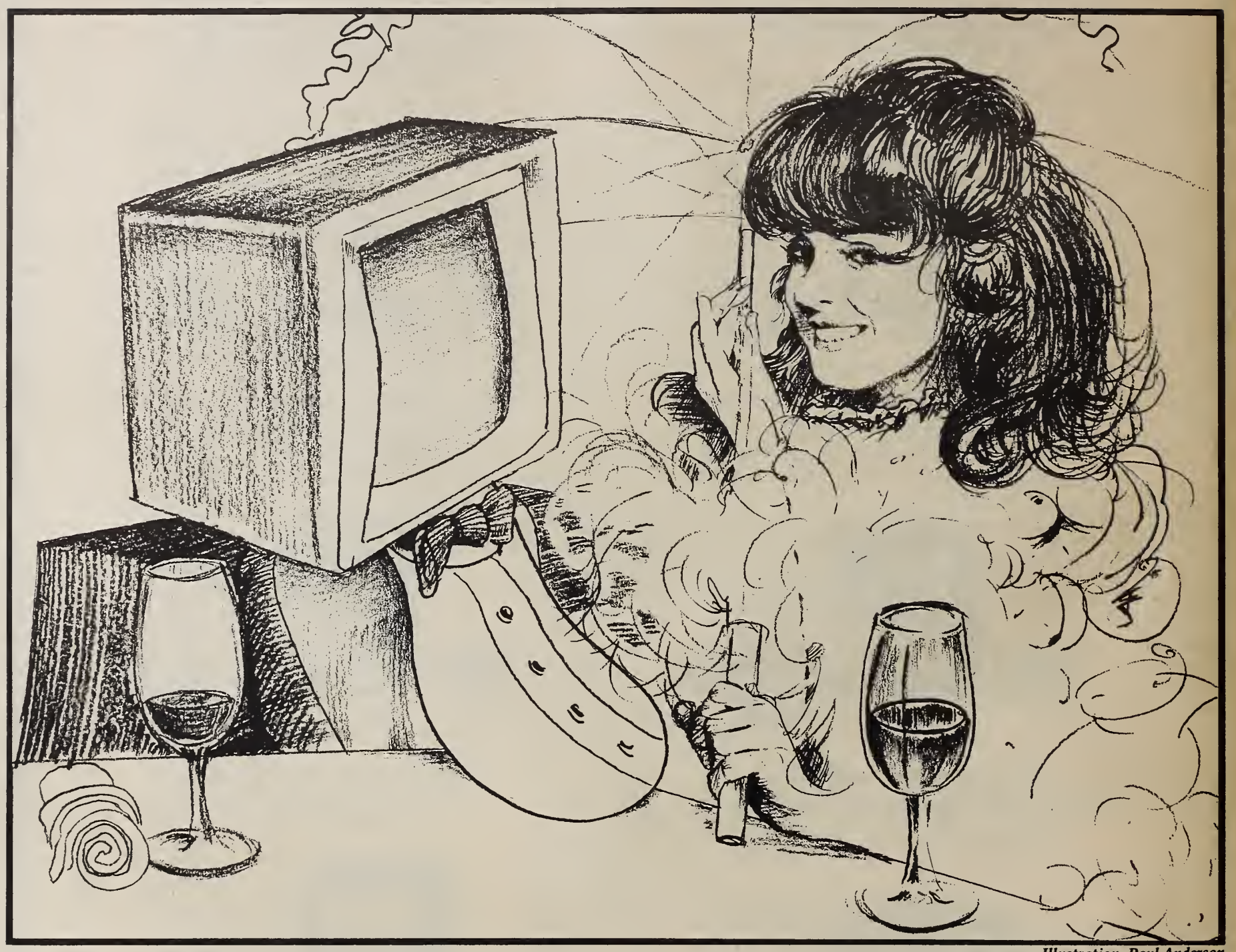


Illustration: Paul Anderson

Each month, in the pages of MicroTimes, our romantic and dauntless heroine Jina Bacarr (creator of *Love's Laserdisc)* finds new adventures out there in the world of computers. Stay with us for her continuing saga. This month's episode: **HAL COMES HOME**

By Jina Bacarr

My childhood fantasy is about to come true. No, not the one about becoming a Mouseketeer (my ears were never quite big enough) or playing Gidget to my very own Moondoggie (I stopped dating surfers when I found out "only the sun knows for sure" about those golden heads of hair). My secret wish began during a summer matinee when I was a kid back in the late sixties. While enveloped in the black womb of a movie theater, I was reborn into the twenty-first century. The film was *2001: A Space Odyssey*.

My favorite part was that living, breathing hunk of microchips: HAL! Imagine, I thought, that talking computer could be the older sibling I never had; a close friend I could share secrets with; the teacher who would never doubt my ability to learn. HAL became my wish on a falling star.

Now HAL is coming home — to my home.

Well, it's not exactly that same irascible box of circuits and bytes I loved in the

film, but the HALCYON interactive videodisc system is the first home entertainment unit to break the fourth wall and pop right into your living room. It features animated and live-action adventures that will challenge and sharpen your skills, as well as entertain and educate in a new and exciting way. No longer do you have to sit there and watch the good guy take the high road to China when you know he should have taken the slow boat; the decision is in your hands, or rather, initiated by your simple spoken command. Now you can "write" your own story as you follow your characters through various adventures by means of this revolutionary laser disc player. Make the right moves and you win the game; take a couple of wrong turns and you'll meet your doom faster than you can say "Indiana Jones."

You remember *Dragon's Lair*, don't you? I'm sure you can't forget the many quarters you lost in the arcade when the kids were in school and you were sure no one was looking. Just a kid's game, you rationalized as you died for the forty-second time in one day without getting a peek at the beautiful Princess Daphne. Just a matter of reflexes, you say. We older "kids" are beyond wrist snapping and want something to stimulate our brains. Isn't that what you told your kids when they beat you? Well, put your money where your brains are. HALCYON is here.

The idea is the same as in *Dragon's Lair*: the player controls the action, but instead of a joystick, the deeds of derring-do are instigated by your voice. It doesn't matter if you are a soprano or a low bass, the computer recognizes and comprehends your spoken command and answers you in return. HALCYON remembers your name (that's more than your last date did) and can actually learn about you as you play the game. ("Do you prefer white wine or red?") He even keeps track of your progress in the game — and reminds you of your score periodically (in case you're wondering what he sounds like, he could be E.T. after his voice changes). What's more, he is immune to power blackouts and jealous spouses (if someone turns off the power, HALCYON will remember where you left off). He does everything but tuck you in bed at night.

So I took a trip down south to Carlsbad, home of Rick Dyer Industries, HALCYON's creator. (Don't tell anyone, but I did pack my bikini just in case I happened to find myself near the beach). After hearing about all the years of hard work and

Jina Bacarr. Photo: Don Hamilton

huge amounts of money that went into developing the HALCYON system, I couldn't wait to play it. I stuffed my bikini back into my briefcase and traded an afternoon on the sands for the most exciting experience of my life (not counting the time I ran into Tom Selleck on a beach in Hawaii, of course).

I didn't know quite what to expect, but I knew the moment I sat down in the screening room that this was the real thing. The HALCYON entertainment system was hooked up to a TV monitor and I was impressed with the looks of it as well as the electronic gadgetry. I had had visions of some gigantic computer-like machine (like the WOPR in *War Games*), but the sleek, compact unit could fit into a home entertainment system cabinet. The auxiliary keyboard was placed in front of me and I was given a headset to put on. The game was about to begin!

The calm, sagacious computer asked me in a very sexy voice: "Do you want to play HALCYON?"

I was so anxious to play, I started shouting instructions in every direction. "Of course ... whaddya think ... let's go!" I babbled, not knowing that a simple "yes" was all I needed.

After a staff member clued me in, I proceeded to "break in" HALCYON; that is, he and I got to know each other — sort of like a blind date, except you know how the night is going to end. I repeated my name into the microphone three times (this repetitive process is necessary before a permanent voice print is made); however, in trying to impress HALCYON with my own sexy voice, I was rather haphazard in my pattern.

"Be consistent," HAL let me know more than once. After a couple more tries, my name was forever on the computer's lips. Next, I repeated several key words in the game ("sword," "black mace," etc.) that I would need later on in my adventure. Once the computer had my voice print of all the necessary words, I would not have to repeat this procedure, even if I turned the game off for a long period of time. (Imagine if you could use this technique on your friends!)

At last I was ready to begin my quest ....

With keyboard at my fingertips and headset resting securely on my hair (there went my thirty dollar styling, but it was worth it), I awaited with great anticipation as the story began to unravel before my eyes.

After a detailed introduction to the story of Thayer and the Five Kingdoms, I was next treated to some of the most beautiful animation I've seen since Disney's *Jungle Book*. I was immediately taken with the style of the artwork, the audio variation of the many voices, and the well-defined characters. It was more than I expected — I really did feel that I was experiencing the action as Thayer. Of course, I got zapped a few times, and it did take some time before I caught onto the idea that some of the items presented to me were there for the taking and could be used to help me win the game.

For example, when I entered the Enchanted Village the first time, I just stood there and like a dope watched it disappear without doing anything. Add the fact that I took too long to make up my mind what to do (I sure learned not to make the computer wait — my date next Saturday will be happy to hear that) and I died before I even got a chance to do anything, and you find out quickly there's more to this game than just talk. The second time I found myself in the Enchanted Village I didn't just make up my mind quickly, but decided to use the Moonstone Amulet I had acquired earlier. As I watched the Amulet glow and listened to it whirr musically, the Village vanished, but two new paths away from the clearing appeared. I took the left path and ....

Wait a minute! I'm not going to tell you anymore. You'll just have to wait until you find yourself in the same situation.

HALCYON: A Technician's View

When Jina Bacarr first described RDI's new HALCYON game system to me, I was, quite simply, in a state of mild shock. Part of this is due to what RDI has managed to pack into this small bundle of components. But also, I remember a time, not so long ago, when a system with the capabilities of HALCYON was not possible at ANY price. RDI has brought several maturing technologies (laser videodisc, speech synthesis, speech recognition, etc.) together for the first time in a package that is attractive both in appearance and price (quoted at the time of the CES show at around $2000.00 retail), as well as potentially more powerful and useful than anyone, even its designer,

Anyway, after a few minutes, HALCYON reminded me of my score ("Out of a possible score of 50,000, you have 2,345 points"). And I swear I heard him chuckle as he repeated my pathetic score a couple more times, but HALCYON isn't really human — or is he?

I began to wonder when he made a few interesting remarks after I died a couple of times, but after awhile, I enjoyed the amusing repartee between us. By the time I turned off the game (actually when I saw the midnight janitor coming in to clean and figured it was time to go), I had mastered a few techniques and had actually received a couple of helpful hints from HALCYON on how to win the game.

I gathered up my notes and put them in the car. As I got behind the wheel and prepared to brave the freeway again, I knew how Ulysses must have felt when his ship passed the Rock of the Sirens. HALCYON was calling to me. Unlike Homer's brave hero, however, I couldn't ignore him.

Luckily, the janitor recognized a case of HALCYONITIS when he saw it and let me back in. I sat down and turned on the laser disc system. Suppose he didn't recognize my voice? That it was just a one night stand and he wouldn't have anything to do with me? What would I do then?

I breathed a sign of relief when I heard his seductive voice greet me by name. "How are you?" he asked amicably. "Do you want to play HALCYON?"

"YES!" I shouted and the game began exactly where I had left off.

I was home at last. □

Rick Dyer, had initially envisioned.

At the heart of HALCYON is a modified Pioneer Laserdisc player that has a one-side storage capacity of 54,000 discrete frames (that's about 30 minutes of real-time video). The modifications to the player (which may still be used to play conventional videodiscs) consist primarily of a "smart" interface to allow the control unit to call up the frame or sequence that is needed. It is the inherent power of the videodisc (frame to frame access time, storage density, etc.) that makes HALCYON such a power system for not only game playing, but for applications in military and industrial training, visual data base management, simulations, and a variety of other possibilities.

HALCYON'S most attractive feature is its use of speech synthesis and recognition for the vast majority of its player inputs and responses. I'm told that HALCYON has a vocabulary of over 1000 words that it can produce and recognize. While I have not yet had the chance to check out the full range of HALCYON'S speech capabilities, it appears to be a major advance over other commercially available systems which have been limited to a vocabulary of 100-200 words maximum. Another major advance is the ability of HALCYON to recognize your voice. This is established at the beginning of the game when the HALCYON system asks you to recite a series of words to initialize the voice recognition features of the system. As noted by Ms. Bacarr, this requires some steadiness in your voice, as the range of the system is somewhat limited. In spite of this, the system is quickly adapted to and users will have no trouble getting used to HAL talking to them.

HALCYON is an ambitious, first generation system that may have a way to go before it reaches into all our homes. Still, it is the first major advance in game systems since the old Atari 2600 game system arrived upon the scene. In addition, if aftermarket hardware, software, and videodisc producers should embrace this system as any sort of an industry standard, HALCYON could be as important to the home entertainment market as the Apple was to the computer market.

— John D. Gresham

RDI and the Laserdisc Revolution

Rick Dyer, who pioneered the interactive video concept, is a young (29) entrepreneur who started early. Visitors to his college dorm still remember the interesting conversations they had with some of his "friends" — electronic robots and the first prototypes of the HALCYON system.

After college, Dyer spent a few years in the corporate world, first at Hughes and then at Mattel Toys. But he wanted more. He wanted to make the future happen now, so, fearlessly striking out on his own, he formed his own company, Rick Dyer Industries.

RDI's first creation, *Dragon's Lair*, was a joint effort with Don Bluth Studios and was five years in the development process. When this revolutionary interactive video hit the arcades this summer, its intrepid hero Dirk the Daring rescued more than the Princess Daphne. *Dragon's Lair* revitalized the entire arcade industry; it sold over 8,000 games at $4500-5000 per unit, for a hefty total of around $43 million. *Dragon's Lair II* is in the works, and Coleco will soon release home computer laserdisc versions of both *Dragon's Lair* and RDI's second interactive game *Space Age*.

But Dyer wanted to carry the interactive video concept even further. He wanted to create, not just a sophisticated game unit, but "someone" capable of developing a relationship with one player. Realizing that verbal communication was the key to this system, he created and patented speech-recognition and speech-synthesizer equipment for videodisc players.

At RDI's new headquarters in Carlsbad (San Diego County), the final state of combining art and technology took place. Using the flexibility of the laserdisc instead of a computer, Dyer created a system that affords fifty million times the capacity for variation of a computer chip. Next, he brought in first-class animators to bring his fantasy ideas to life. No expense was spared in creating rich, colorful backgrounds and vibrant, well-executed characters who play out their lives in accordance with the player's wishes. Finally, a well-trained staff of writers created interesting plots and compelling adventures.

The result, HALCYON, was premiered at the CES show in Chicago in June, and should be commercially available by the end of this year. By next summer 25-30,000 units should be out, with a variety of programming for the most discriminating game player.

The first game to be marketed is *Thayer's Quest*, a heroic fantasy adventure game. Like other HALCYON games, its R & D costs are estimated at $2 million. It is completely animated and musically scored; the voice-overs are performed by professional actors. According to Dyer's estimate, *Thayer's Quest* can be played for an average of 20 hours a week for at least six months before the player has completely explored the world contained on the laser disc.

Also in the works are *Orpheus*, revolving around the tale from Greek mythology; *The Spirit of Whittier Mansion*, a horror adventure which uses live-action film techniques; *Shadow of the Stars*, an exploration game of the universe; and *Voyage to the New World*, an educational, historical adventure.

— Jina Bacarr

CHRISTMAS PRODUCT GUIDE

A list of some of the hot new items for your Christmas computer gift-giving ideas

For those of us who like the idea, but can't fathom (ha ha) those existing INFOCOM adventure games, try **Seastalker**, a game designed with the beginning quester in mind. This game features the best graphics possible, those created by your own imagination. ($49.95)

Brought to you live from the pages of *Mad* magazine, **Spy vs. Spy** from First Star Software pits two players against one another in funny and challenging situations. The game features excellent animated graphics.

Those of you who have obtained Edumate Light Pens will be happy to learn of the support software available for them. The best of these is the **Peripheral Vision**, a very high res graphic drawing program. ($34.95)

AMDEK Corp. has introduced a new line of color monitors for all price ranges and applications. The new line boasts the best warranty in the industry — three year CRT and two year electronics. Available for all machines in composite or RGB.

Technology Products Inc. has dust covers available for all types of computers, peripherals, and price ranges. The luxury series is a leather-like vinyl. The standard is nylon, available in four colors. The economy version is a durable clear plastic.

Taking a trip and toting your computer along? **KIWI** certainly has a bag for you. They have a large variety of soft padded cases, everything from "Mac" backpacks to Compaq carriers.

Persons who enjoy spending time in the kitchen should go nuts for **The Slim Gourmet** from Harper and Row Publishing. This interactive program allows you to plan diets and includes over 400 easy recipes which you can modify. Excellent for the nutritionally minded.

Raid Over Moscow from Access Software simulates a surprise Soviet nuclear attack on a defenseless United States which has disarmed in accordance with SALT IV agreements. As commander of a space station armed with stealth bombers, you are the only hope for defense. High res graphics and multiple screens make this an excellent choice for any arcader with an Atari or Commodore computer. ($34.95)

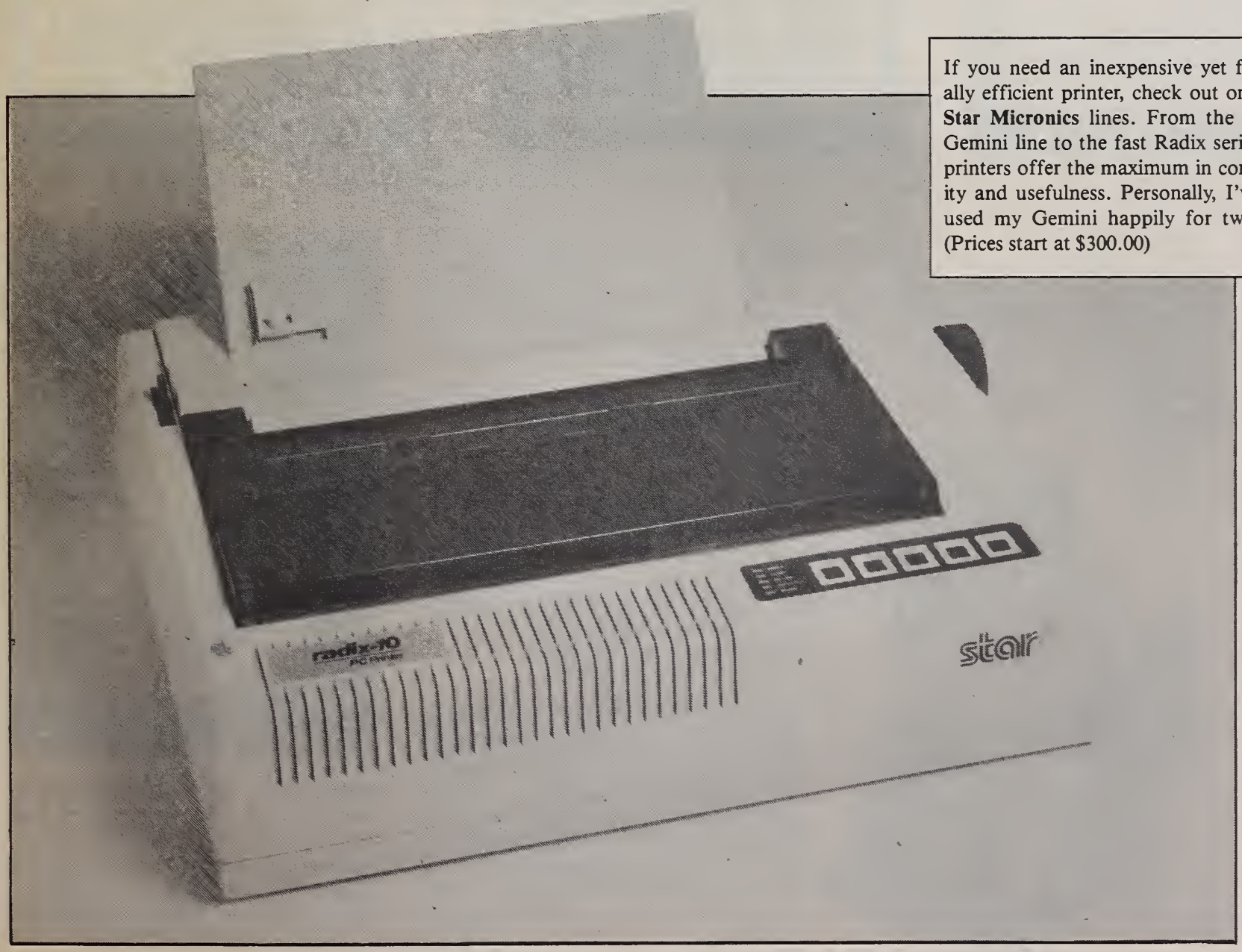
Sports enthusiasts will thrill with **Grand Slam Baseball** and **Tournament Tennis** by Imagic for IBM PC Jr. and Adam. Both entries feature 3-D graphics and good playability. ($34.95)

What would be more appropriate this year than a game on electioneering? **Campaign '84** from Sunrise Software requires all your skill and knowledge as you choose the best possible strategy to catapult yourself into the Oval Office. Available for Coleco, Atari, and Commodore computers.

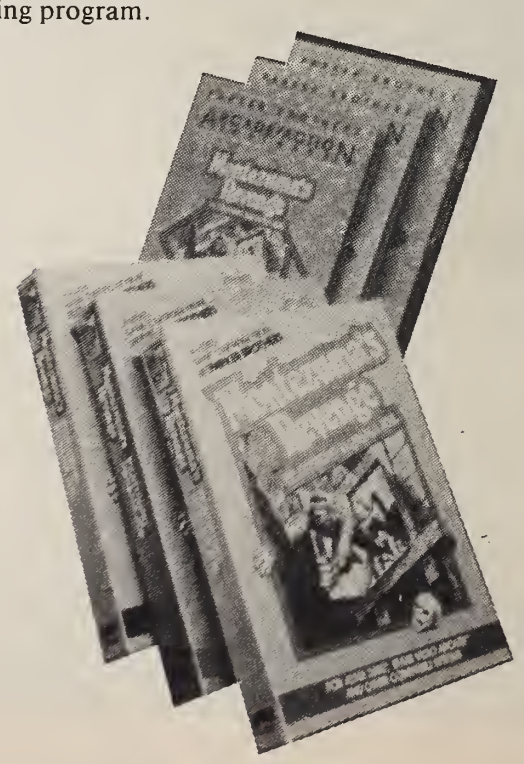
Mastertype from Scarborough Systems is an educational typing software package which has withstood the test of time. Accept no substitutes! This one is the best! Available for just about all systems. ($39.95)

King's Quest by Sierra Online is an adventure game simple enough to be enjoyed by children yet sophisticated enough to maintain the interest of flighty adults. The program features excellent 3-D graphics and has received much acclaim during its short product life. ($39.95)

If you need an inexpensive yet functionally efficient printer, check out one of the **Star Micronics** lines. From the low-cost Gemini line to the fast Radix series, these printers offer the maximum in compatibility and usefulness. Personally, I've [Kim] used my Gemini happily for two years. (Prices start at $300.00)



Creative Software's line of personal productivity software—*Creative Writer, Creative Filer,* and *Creative Calc*—has delighted users with its usefulness and ease of operation. Joining the Creative family just in time for Christmas is *Creative Finance,* a new budget and accounting program.



The Sticky Bear series of educational programs by Weekly Reader Family Software should be a welcome addition in any home with pre-school age youngsters. Recently added to the well-known line are *Stickybear Beginning Math* and *Stickybear Beginning Reading*. These are brought to you by a company that believes learning can be fun. ($34.95 per module)

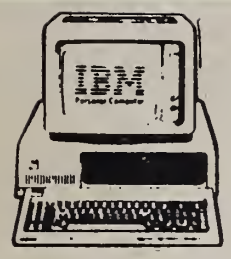
Pilots and would-be pilots all thrill to Sublogic's **Flight Simulator II**. This program is now available for IBM PC, Apple, and Atari computers. There is even a multi-user version which provides for inter-computer communications. It's going to become a crowded sky. ($49.95)

After thousands of hours of playtesting, **Montezuma's Revenge** from Parker Brothers has received family acclaim as the best purchase this year for Colecovision. This entry is an adventure game in which Mom and Dad won't be too embarrassed by not having the manual dexterity of the kids. Also, look for **Mr. Do's Castle**, sure to be on every kid's want list. ($34.95)

Anyone who owns a computer can tell you that you can never have enough good working joysticks. **SUNCOM** offers a series of reasonably priced entries in both analog and digital varieties. Don't be caught short on Christmas Day. (From $12.00) *— Don Hamilton/Kim Nelson*

EFI'S
Discount Computer Store

Specialist In IBM PC & XT Hardware, Software, Accessories, Supplies, Ribbons



PC, XT
or AT
$Call

COMPAQ
COMPUTER
$Call

SOFTWARE

Wordstar Pro Pac	$295
MBSI Accounting	419
Multimate	265
d/Base II/III	$call
Framework	$call
Volkswriter Deluxe	179
Managing Your Money	137
Quickcode	149
dGraph	149
Sideways	49
Knowledge Man	325
Lotus 1-2-3	$call
Think Tank	159
Dollars & Sense	135

DISK DRIVES

Tandon 100-2	$179
Micro Sci. 10 MB Internal installed	945
40 MB Internal Hard Disk	2,495

MONITORS

Princeton HX-12	$call
Princeton MAX-12	190
Amdek 310A	$call
Quadchrom HX-12	475

PRINTERS

Epson FX-100	$call
Epson RX-80	249
Epson RX-80 FT	295
Dynax DX-15	395
Brother HR-35	899
NEC 3550	1525
Diablo 630	$call
OKI printers	$call

HARDWARE

8087 Chip	$169
AST Six Pak w/64k	269
New quadboard w/64k	269
Hercules Graphic/Color	$call
IBM color card	$call
Hayes 1200B	395
Hayes 1200	485

SUPPLIES

Memorex DS/DD	$30.95
Dysan DS/DD	35.95
9 1/2 x 11 box of paper	29.95
Diskette Storage	19.95
Ribbons	$call

We carry brand name merchandise always at a discount.

CALL US FOR YOUR PRICE ON ANY PRODUCT.

VISA®

Installation Available. Cash Prices Only.
HOURS 10-6 MON.-FRI., SAT 10-2
3349 B MT. DIABLO BLVD., LAFAYETTE

master charge
THE INTERBANK CARD

(415) 283-1700

WE WILL NOT BE UNDERSOLD! CALL BEFORE YOU BUY

Prices may change without notice *90 day warranty on all products*

IBM is a registered trademark of International Business Machine Corp.

THE CRACKER SPEAKS

*... on the FBI and other hacker hazards in a post-*War Games *world*

By Don Hamilton and Mike Markowitz

Bill Landreth, 19, is slight of build, gracious and softspoken. His blue eyes have a mischievous sparkle. In his world, he is known as "The Cracker." He is not, by any stretch of the imagination, a computer "nerd" — nerds, by definition, are overweight, unwashed and have all the social skills of a doorknob. Bill does get low marks for giving directions over the telephone, at least to humans! We spent about three hours beating around the hills of outermost San Diego County looking for his house. He gets high marks, however, for giving directions to computers over the telephone.

Sometimes this gets him into trouble....

We interviewed Bill in his room, which is dominated by a splendid new IBM PC and adorned with classic Frank Frazetta posters and a picture of Steve Martin used as a dartboard.

Why don't you give us a little background?

Well, I'm Bill Landreth. On October 13, 1983 I was served with a search warrant by the FBI. They came in and took all of my equipment, which at that time was mainly that Franklin there. They told me that I was being investigated for wire fraud, that I was suspected of being involved in illegal activity using the GTE Telenet computer. Since then I've been indicted and tried. I pled guilty and haven't been sentenced yet.

So this is a federal charge?

Yes — FEDERAL FELONY.

Did they kick down your door?

No, but I'm told that they would have if we hadn't opened it for them — there have been incidents where the mothers of people involved didn't open the door....

Friends of yours?

Yes. One case in Detroit, the person's mother didn't want to open the door and the FBI just broke in the door. I know of another case in your area (Orange County) where they climbed in through a window — they didn't even come to the front door — they just climbed up a water drain pipe and broke in a window — I guess under the pretext that they didn't want to give the hackers a chance to erase anything by knocking on the front door.

They didn't damage your equipment?

Not much. Other people have had equipment damaged irreparably. But not me.

It must have been a terrifying experience....

Well, it was, it shook me. But most people were surprised that it wasn't more terrifying to me. The judge didn't pass sentence right away. He ordered me to undergo study, which in theory I'm undergoing right now, and I had to spend four days at a prison — M.C.C., here in San Diego.

What was that like?

Well, it was actually all relatively light offenses, but it wasn't pleasant — it was a prison.

What do you think is going to happen now?

Well, assuming that the judge doesn't do something totally unexpected, I would expect parole with possibly a fine or a penalty, which wouldn't be more than $100, because both the prosecuting attorney and my probation officer suggested probation.

So you're not in great danger of being locked up?

Not according to most people I talk to.

How do you suppose they got on to you?

There are two aspects to that. One — they probably tracked me down through friends....

You mean someone ratted on you?

Yes, basically. But the second and more important point is that if I had thought I was doing anything that would offend anyone that much, I certainly wouldn't have been caught. I mean, it's very easy to evade people, I wasn't trying not to get caught. I wasn't doing anything that I would consider illegal — it is, technically, but....

What were you doing?

Well, I was using my computer to talk to friends — I could have been reading NASA's mail or getting stock tips, but I was just communicating with friends. I wasn't accused of anything but that. The point is that if I was getting stock tips, or reading NASA's mail, then I would not have been caught — I would have taken precautions.

So they didn't know exactly what you did when you accessed the system?

The investigators didn't know, but GTE knew, and they were the ones who called the FBI.

In the evidence that they presented against you, did they indicate how they had tracked you down?

There was an affidavit that had a signature that was blocked out. They did keep the mail, although they didn't use that as evidence — mostly because it was just social mail, it didn't pertain to the case. It was just what you'd find on a bulletin board. It's always possible that later in the case they put on a wire tap or a trace, but they wouldn't have done that until after they had already tracked me down to my house.

Do you imagine that you have any unique or special skills or talents?

Well, I'm a little more dedicated than some people, but I don't think I have any special skills or talents. But then again, most people probably aren't interested in doing what I was doing — communicating with people on a network.

How did you find out about the electronic mail system?

I first knew that it existed, oh, two and

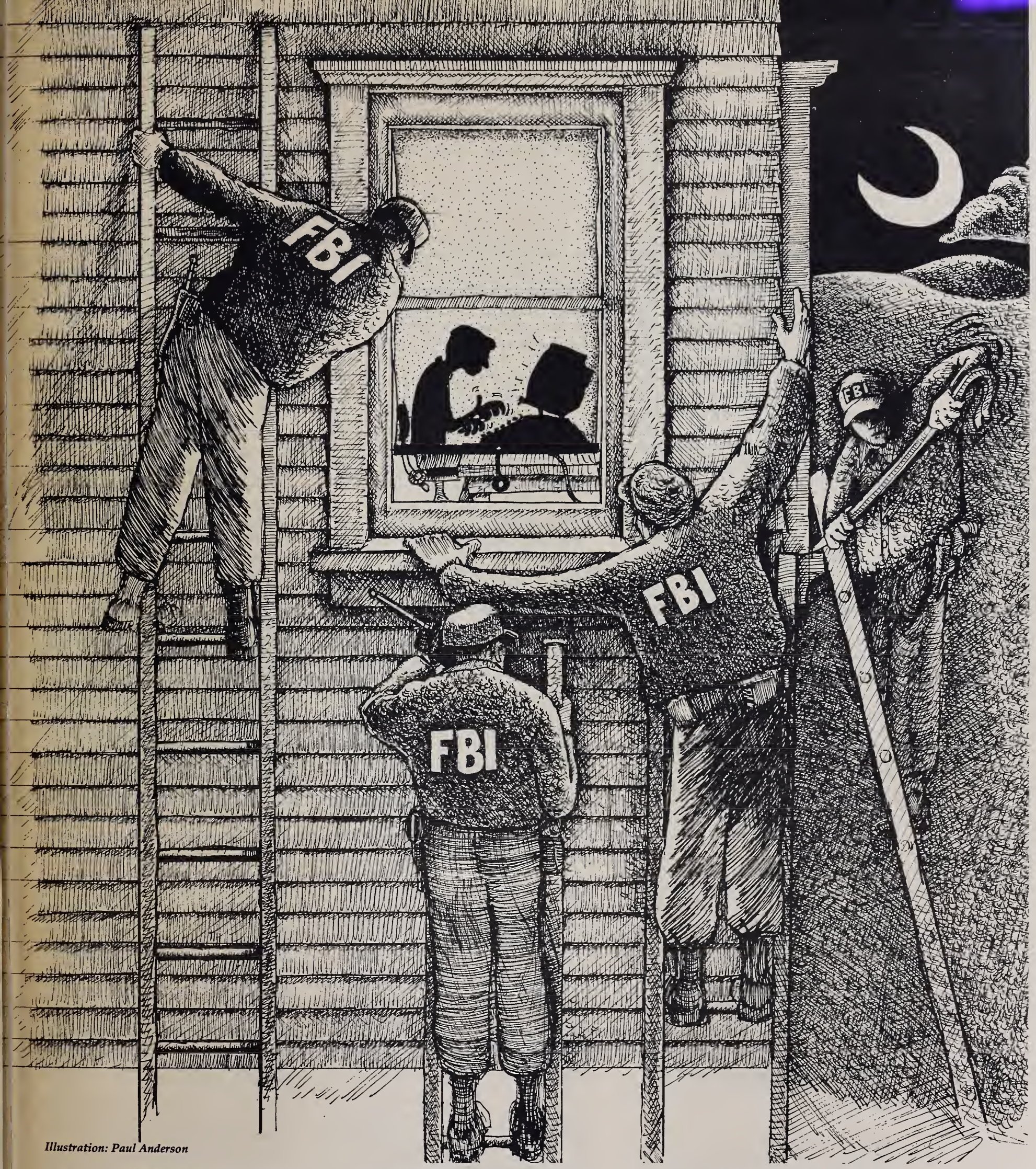


Illustration: Paul Anderson

a half to three years ago. Actually, I can show you a little bit right now if you want ... Telenet is a network service. It has about 20 thousand computers on it.

How did you find out about the system, by just studying and getting into it?

Well, I had a little help. First, I was given an account, basically like the one you saw, pretty much a public account. Then, through just playing around with the computer, I was able to get one other account.

By persistence?

I guess that's a good description of the method. I don't know any hacker who tries six A's, then five A's and a B....

And all permutations...

No. No one goes through all that. But that's the basic idea — just trying different things. People aren't as creative as they think they are. They tend to choose the same secret passwords.

When you say that everyone uses the same passwords, do you have some passwords off the top of your head that you run into a lot?

There are three that you find all the time, not necessarily in this order, SECRET, LOVE and SEX. No one ever seems to claim that they've had this password, but you run into it a lot. Also, the single most commonly used password is the person's first name or some variation of it. Along the same line, one of the versions of Hack, Hack (which is trying all permutations) is getting a database which has anywhere from ten to fifty things that you want to try and then plugging in fifty account names and letting the computer try them out.

Sort of like in War Games *where he dialed all the phone numbers...*

That also has happened, but not nearly as often as you'd think. You'd be surprised at how many computers you run into. Anywhere from one in fifty to one in two hundred numbers is a computer — but for a computer dialing, two hundred numbers is only a half hour. It's not that much trouble.

So you've done that before, or know people who have?

Yeah, but it's not a big deal because there are thousands of computers, and they're throwing themselves at you, you don't have to go searching....

Here's a rude question, what are your phone bills like?

My phone bills are usually between four and five hundred dollars. Other people are more likely to use illegal SPRINT codes, and have almost no phone bill. Other people stick to the networks. If I stuck to the networks I'd have almost no phone bill. It's surprising, just calling semi-local bulletin boards, the Pigsty, and boards like that, you run up quite a few calls, because you call every day.

How many people are there on the Pigsty?

Sixty, something like that..,it's a very low number.

How long have you had a relationship with the Pigsty?

It was just starting, I don't remember what year it was. I'm an outsider, one of the very few.

What do you know about the people, have you met them?

Yes, most of them are older, which is *not* typical for bulletin boards. It's my favorite bulletin board.

Have you become a celebrity?

Well, I think I could be more of one if I wanted to. *Infoworld's* been calling me. When this thing started three of my friends and I were invited to go on *Nightline*, and we turned that down.

It seems prudent to keep a low profile?

(laughs) I think so.

What's going to become of you in the long run? What are your plans?

I've always planned on being a programmer of some kind.

That means school?

Not necessarily. I plan on programming microcomputers, and at this point I'm sure that school wouldn't help. Microsoft thinks I'll make a good writer and wants me to write another book already. I'm not worried about the future.

A lot of people worry about computers being addictive. What's your sense of that?

Hard to say. I've been into computers since about 1979, when I was about fourteen. I didn't know anything about computers. I knew that video games were controlled by computers and that's about it. I tried, I'm sure, all the dumb things, to get the computer to do something and found that they didn't work. Within a few months I was writing simple programs, and that's what pulled me in.

Was the Apple the first computer you had?

No. I had a TRS-80 model 1 for about a year, then I got this, and sent the TRS to my grandfather...Then I got my IBM.

Do you have a job? Do you finance your computers yourself?

I work for my parents. They own an import shop. Also I can usually babysit, because I have seven younger brothers and sisters.

Would you say that your knowledge of computers, if you started at fourteen, has helped you with your school work?

It probably would have helped if I'd used it constructively, but I didn't. I neglected school mostly...I was very bored with it.

So school was sort of irrelevant?

Yes. It was to me, because I could learn this stuff at my own pace. I could learn what I considered to be much more important.

What kind of grades did you get?

While I was in one school I still maintained between a B and a C average, but we did move around a lot. I went to three different high schools.

What would you say to a person about to start on the same path you did? Is it a good thing to do — to go out and dodge the FBI?

Well, one thing about hackers that a lot of people don't understand is that being on a large corporate computer is an everyday thing, and the system operators are usually our allies; it's not like they're after us. They're not system operators because it's such a great profession, but because they like computers, and they very likely were hackers before they became system operators.

Bill Landreth. Photo: Don Hamilton

Almost like an apprenticeship, isn't it?

I guess it seems that way, yes.

Well, is it against the law (now that you're sort of an expert on the law) to communicate with a corporate computer, or is it true that if you discover that you're there and you leave, then you've violated no law?

(Takes a sheaf of papers off the floor) This is an interview with an attorney that deals with computer law, and according to him it's not illegal to be on a computer that you're not authorized to be on. Only if you've made some effort to breach the security.

Has the judge given you any hint as to when he might pass final sentence?

I think it's scheduled for late October.

Did you get a sense that your own lawyer, and for that matter the prosecution, were technically knowledgeable, or did they seem to be out of their depth?

Well, they were definitely *not* technically knowledgeable. For example, the prosecuting attorney mentioned the movie *War Games*, which is a common thing for people to bring up.

It's something everyone out there seems to relate to....

I don't want to review it as a movie critic, it's just that hackers didn't like it. There were two main things it caused that hackers didn't like. One was public pressure on the law. Probably my case was a direct result of that. Second, it caused more hackers, many more hackers.

So you're saying that that movie may have caused you to have a legal problem?

I think there's not much question of it. After the movie *War Games* came out, some people said it informed the FBI, but I assume the FBI knew the state of things without the movie. But it did cause public outcry. "This really is powerful, and these kids really do all this..." They had to put up a show of force.

"Corporate system operators are usually our allies; they very likely were hackers before they became system operators."

A second thing, which also may have contributed, is that all these new people with Commodores or whatever wanted to become hackers and they made no secret of it. All of a sudden, where there had been maybe hundreds in the country, there were now thousands. It caused something that's unfortunate, which is an elitism among the people who were around before, which I don't like.

So you think that it is quite a bit of fun, and not that bad if you're careful not to do anything illegal?

For people just starting, I would definitely say, I spent a year at least learning about computers before I even knew about telecommunications.

So that you don't accidentally do something illegal?

Yes. In fact, that's what the 414's did. They decided they wanted to cover their tracks and delete the log files, and they deleted something totally different and caused a lot of trouble.

Inexperienced hackers leave trails all over....

Yes, and don't take precautions....

What kind of precautions?

It depends; very simple things, like not leaving your name, or not using your real name, or the answerback on your computer. There may be some way they can find out the serial number of the program you're using, and track you through that. Just dialing direct can be dangerous if you're worried about being traced. Advanced hackers might pick up the phone and talk a few seconds before they connect to the computer because the phone company doesn't want to touch trying to trace a voice call, because of the legal problems involved, while they might want to trace a data call.

The book you're working on, is it about your history or "how to hack"?

It started out completely technical and security, but Microsoft saw that I could write, and it became something else, more "this is who hackers are and why they do what they do."

What is your field of expertise?

People come to me with problems on VAX's — that was my first computer. Also psychology questions like, "I've got this person...I've got this data on him... What do you think he might have for a password?" I'm better than the average person at figuring out what to try. And I'm more willing to talk to new hackers, so I get a lot of them asking me for advice. I try not to be as elitist as some people.

Do you give out your phone number?

Not very freely, but more freely than most people — which perhaps is one of the things that eventually led to me becoming caught....

Are you now an expert on preventing hackers from breaking into systems? Could you get a job like that?

I think I probably could, but I don't know if there's a great demand for it. It's kind of like a guy who goes around and tells people how to keep burglars out. It's not that complicated, it's just that those system operators aren't that interested.

So I'd be best off, if I were making a password, to use a random number?

Not necessarily. That's probably a bad way to go if you're giving a password out to users, because they're going to write that down, or have it taped to their desk, or pull it out of their pocket and slowly type it in.

The best things I've seen had a library of about ten thousand four-and-five letter words and put two of them together, so you had an eight to ten letter password, which most people could remember. You may have noticed MCI Mail, if you're on that, has eight letters: consonant-vowel-consonant-vowel. They think that makes it easier to remember.

So as everything goes onto these systems, do you think that there's a way to make that information safe?

There's definitely a way to make it completely safe, but that involves not making it accessible all over the country. You can't make buildings completely safe, but banks do a pretty good job of it. On the other hand, most computer systems are like a house, they don't need all that security, and in fact often leave their doors open and unlocked.

How did you get VAX training?

By being on one illegally. I've never seen a user's manual, but they've got extensive help files...and then after years of being on computers, you find out the common commands, it's not all that difficult. On Telemail, for example, part of the crime involved creating other accounts. Just by knowing how computers operate, I was able to figure out how to create accounts. They try to make things pretty simple to remember once you learn them. It's not that difficult. That's not where the security is.

What kind of account did you create?

On Telemail there are really two kinds of accounts: administrative and user accounts. Telenet gives an administrative account to a company and the company uses it to create other accounts for their users. I just got hold of one of these administrative accounts, and the crime was creating a message system by creating other accounts for friends.

So that's how they were losing, by having these other accounts.

Yes. People all over the country would log on and leave mail. I think we all knew, and made it quite clear that Telenet was well able to know that we were communicating and able to read the messages we sent; but like I said, I didn't think we were offending anyone that much, because we're not used to the owners of computers reacting that heavily against us. □

JOHN OSBORN AND THE COMPUTER COLORWORKS:

Filling the niches

By Ken Goehner

John Osborn believes in looking one step ahead. At age 67, he is still on the prowl for new ideas and directions for his recently founded Computer Colorworks, a company dedicated to ease and excellence in graphic hardware and software.

It may seem a bit odd for a man Osborn's age to start a new company in what is generally thought of as a whiz-kid's market, but he's obviously quite in his element. His office seems charged with an innovative vigor, and his animated description of new applications for the Colorworks' recently released Digital Paintbrush shows a spiritual kinship to the likes of Thomas Edison.

Dr. Osborn started his career in the intensive care ward at what was then the Stanford Medical Center. There he worked with a number of patients on heart/lung machines, which were then hardly out of the prototype stage. Monitoring the patients was a long, arduous and largely inefficient process; mortality rates were high, and there was obviously a lot of work still to be done. Lacking any engineering background, but being a tinkerer at heart, Osborn found himself developing a whole new range of life-saving devices. Some of his creations are still in use as standard fixtures in emergency wards across the country, and his pioneering efforts in the area of respiratory monitoring have served as the foundation for a whole new generation of medical innovations.

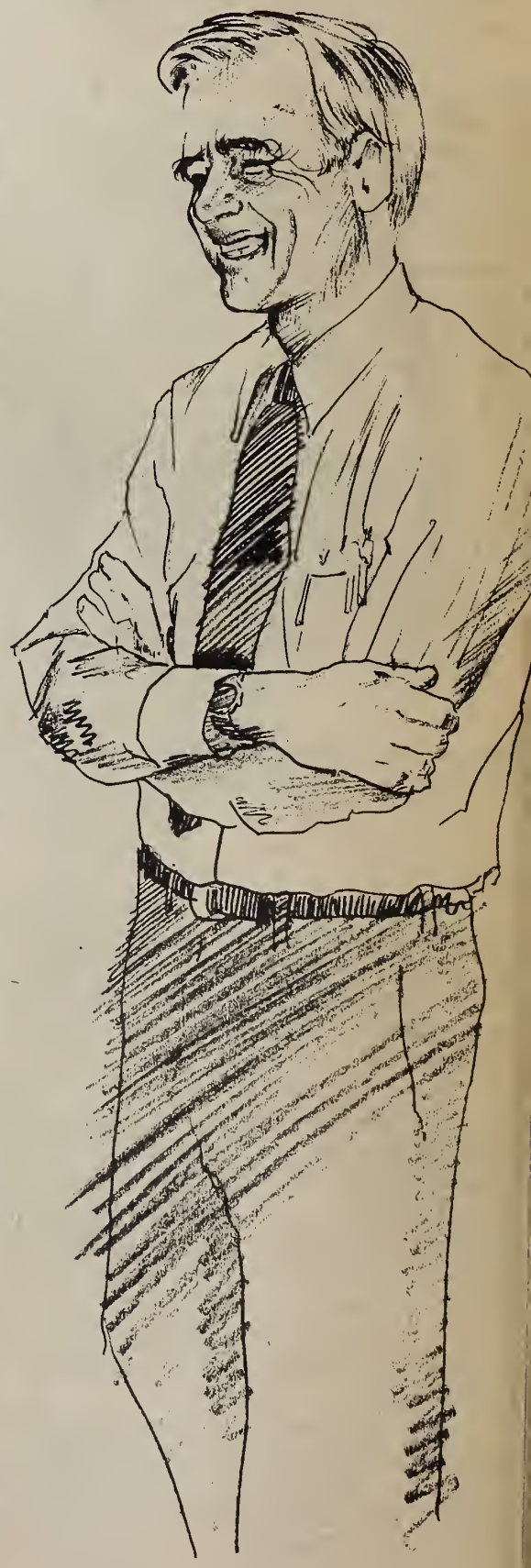
Computers entered his life in a big way in the early '60s when IBM offered Stanford Medical a Series 1800 computer. This monster filled two large rooms, cranked out enough BTU's to heat a house, and was about as smart as a present-day Micro. But it did the trick: for eleven years Osborn and the Pacific Medical Group developed monitoring, analysis and alarm systems for critical care patients on the 1800.

When IBM terminated its involvement, Osborn's group was faced with making the results of their research available to the health care industry. After trying unsuccessfully to market their ideas to a number of development firms, they created their own company. The physician/inventor now wore a third hat, that of entrepreneur.

Business has a life and language of its own, and it proved to be a radical departure from the world of medicine. The transition was not without problems: the projected eight-month venture turned into a seven-year stint; funds were limited and capital hard to find. But the group persevered. To cut costs, family and friends were enlisted as employees, which proved most effective in welding the group into a strong development and marketing team. Eventually the company sold its ideas and name to a subsidiary of Johnson and Johnson, which put the group's creations on the world market.

A non-competition contract was part of the deal with J & J, so Osborn and the group suddenly found their chief area of expertise denied them. They had to decide whether to start a new venture or rest comfortably on their laurels. Though Osborn was then 65, he was reluctant to retire, and in November 1982 he founded the Jandel Corporation. His original plan was to create new hospital support software, but he found the market extremely limited. However, he had long held that a group of intelligent people working as a team was capable of creating anything, given a direction and a reasonable amount of time. He kept Jandel together and began a search for a new product to develop.

His love of tinkering finally suggested the direction the company was to take. For his own amusement, Osborn had written an Etch-A-Sketch type graphics program in Basic on his Apple II. Drawing with the paddles proved extremely awkward, though, and he was determined to come up with something better. His first attempt was a true Rube Goldberg contraption: a Bic ballpoint linked to the paddles by coathangers, string, and rubber bands. While the device was very awkward, it proved easier to draw with than a joystick or any other input device commonly available to the Apple owner. Here was something worth looking into, and in January 1983 The Computer Colorworks



John Osborn. Illustration: Paul Anderson

Somebody's Got To Be The Best!

Flip File
$14.95

Dysan. The Finest Quality Diskettes Available.

Dysan's 5¼" or 8" diskettes are available single- or double-sided, and in single-or double-density formats.

Dysan's advanced production techniques assure that each Dysan diskette is certified 100% error free. So you can count on Dysan for your IBM*, Apple*, Tandy*, Atari*, Commodore*, Osborne* or other personal computers.

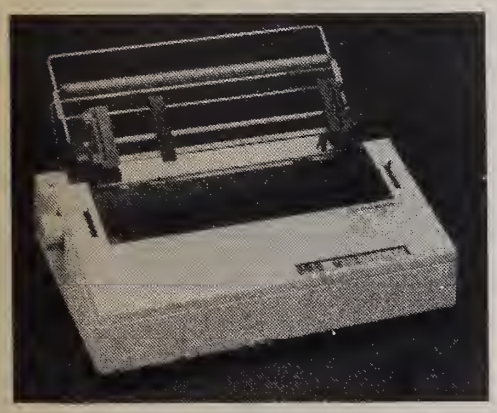
So give us a call. Or stop by. We have a complete inventory of the finest quality diskettes on hand. Dysan diskettes.

SS/DD $27.95

DS/DD $34.95

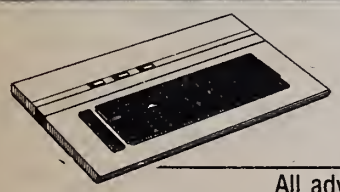
Yes, we have 3½" discs!*

Printers

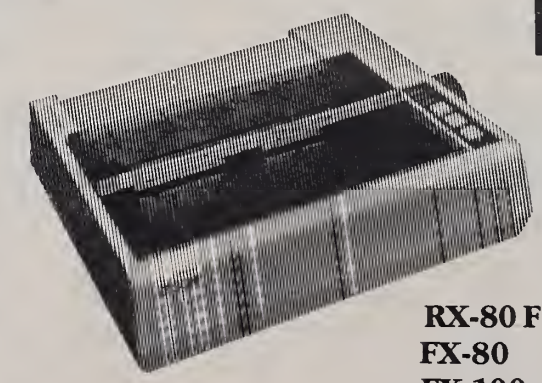


brother®

HR-15 $399
HR-25 $695
HR-35 $895



OPTIONS:
- **Keyboard**
- **Tractor Feeder**
- **Cut Sheet Feeder**



EPSON
RX-80
$269.00

RX-80 F/T	$359
FX-80	$425
FX-100	$649
LQ-1500	$1095

All advertised prices include 3% CASH DISCOUNT • All items may be limited to stock on hand

CALL
(415) 843-2743
Ask about
FINANCING • LEASING
Available

SPIN-TRONICS

2490 Channing Way, Suite 219 at Telegraph Berkeley

VISA AND MASTERCARD ACCEPTED • ADD 10% FOR OPEN ACCOUNTS

Open Mon-Sat
10am-6pm

VALIDATED
FREE PARKING
with purchase

Now accepting applications for
SALES HELP

*Manufacturers may vary.

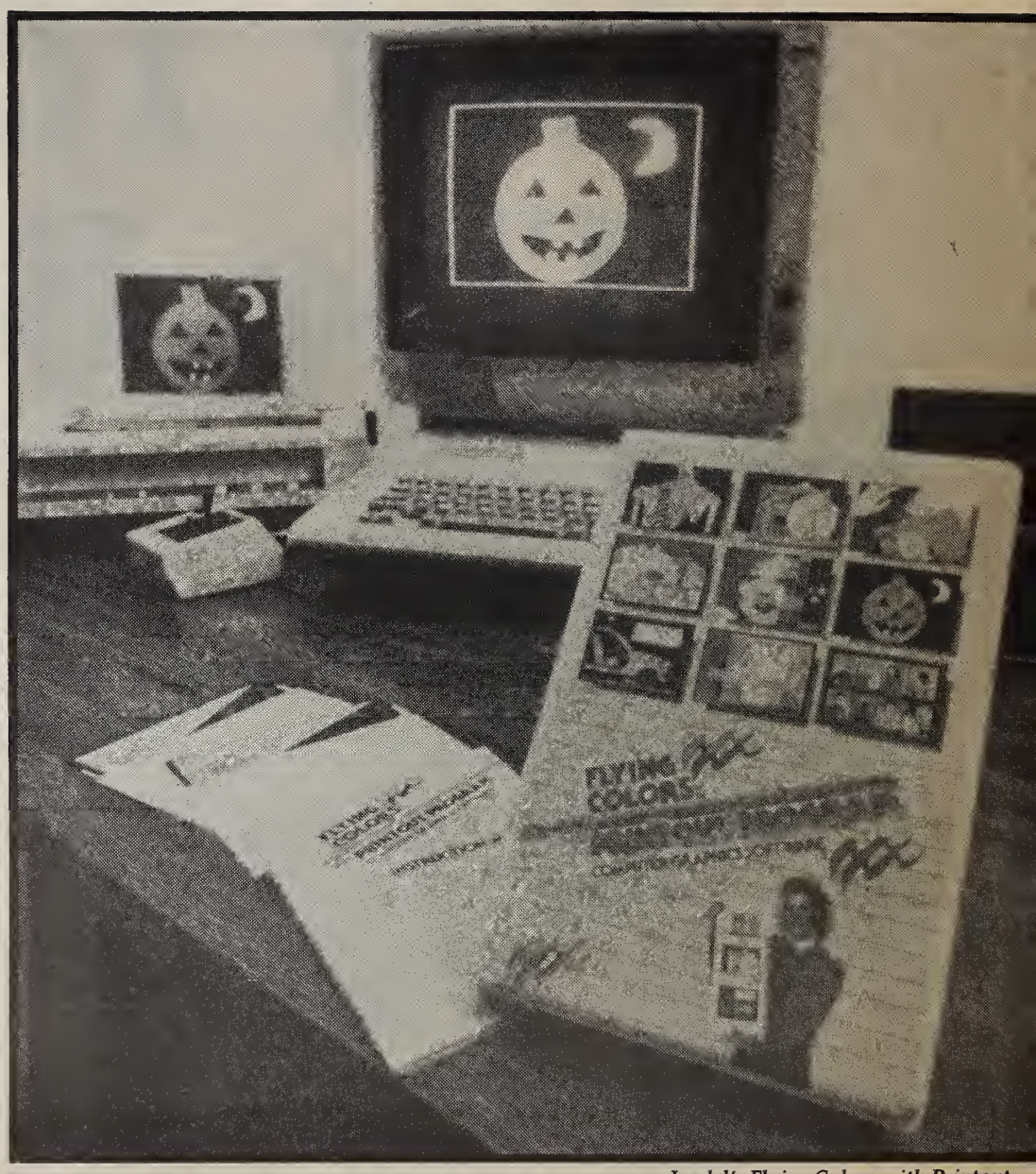
was founded as a Jandel subsidiary to develop an inexpensive hi-res graphic input device.

The development process proved to be a real adventure in one-upmanship. Osborn would propose one design on a Friday and the group would have an improved version by Monday. Concepts and contraptions raced around the group in a dizzying array; by the time a design for the Digital Paintbrush was finalized, nobody was sure who had invented it, but everybody felt that it was somehow theirs.

Meanwhile, the programmers were hard at work creating the graphics software. This project went much faster than the paintbrush endeavor, and after eight months of research and development their first package was made public. *Flying Colors*, a graphic design program, was hailed by many major computer magazines as a triumph in the area of inexpensive, easy-to-use software for the fledgling computer artist. This year *Flying Colors* was awarded the Best Educational Software Award by *Parent's Choice* magazine.

The people at the Colorworks evolved into an amazing cast of affable, intelligent family and friends, making up in enthusiasm what they lacked in experience. Osborn's son Joe, who was to become Vice President in Charge of Marketing, came back from the East Coast, bringing along some of his buddies from his college *a capella* quartet. When the Colorworks released its new *Flying Colors with Printout* program (another nifty graphics package that also did screen dumps), Joe and the rest of the marketing department actually serenaded prospective dealers at several trade shows. Whether this boosted sales is hard to say, but there was talk of a recording contract. . . .

Finally this August the group really had something to sing about — the long-awaited release of the Digital Paintbrush, a versatile device with many applications. As an input device, it functioned better than any available joystick, trac-ball or touch pad. The hardware consists of a stylus attached to a rectangular box by two Dacron strings and a wire; when the stylus is moved, the strings actuate a pair of potentiometers which indicate the position of the stylus in relation to the position of the cursor on the screen. There are four options in drawing area size, 10¾" x 7¾" to 5" x 3¾", which turns out to be quite useful in enlarging an image being traced or measured. The Paintbrush can be used in conjunction with the Graphic Design Program to modify images generated by other graphics packages and can easily transfer graphic files to other programs, such as text adventure games and educational programs.



Jandel's Flying Colors with Printout

The Colorworks' Graphic Design Program is quite sophisticated: it features, besides the standard draw, line, box, circle, fill, and text modes, 38 distinct brushtips. It also has a curve function that plots through 15 points at a time and can be linked to other curves and lines. The user can reverse colors, mix new ones, turn, enlarge, shrink, copy or otherwise manipulate shapes with a swipe of the stylus. It takes awhile to master the program's many features; it is a true designer's tool in a complicated medium.

There's more to the package than creating images: they can be displayed by use of the slide tray portion of the graphics disk, or even transmitted by telephone. Several people equipped with the Digital Paintbrush System can draw simultaneously on a screen, meanwhile communicating either by typed-in conversation or verbally while transmitting the graphic.

Not surprisingly, The Computer Colorworks is deluged with inquiries about possible applications of the Paintbrush, with the engineering and scientific communities being particularly interested. The device has come a long way since its prototype was field-tested in a grade school as an educational toy.

Osborn, meanwhile, continues to look toward the future. While he won't comment on his next major project, he does say with a smile, "There are always niches to be filled." □

OSBORNE™

SALES AND SERVICE

MISSION PEAK SYSTEMS, INC. is a fully Authorized Dealer for Osborne Computer Corporation, but that is only the begining of our story. Mission Peak Systems, Inc. has been repairing Osborne products at a reasonable price with a speedy turn around for over three years! That's right, Mission Peak Systems, Inc. is staffed completely with ex-Osborne Field Service employees who have been repairing and servicing Osborne's for three years. The employees of Mission Peak Systems know more about Osbornes and Osborne related products than anyone in the world! This is not the end of our story. We have established a network of Osborne dealers and service depots nationwide that will repair your Osborne, under warranty if purchased from Mission Peak, so you can travel with out fear of a breakdown.

Besides service and repair we offer:

- Osborne 1 and Executive computer, new and used, with a 90-day warranty
- Upgrades, (80 column, double density, hard disks, ram disks, etc.)
- Accessories, (cables, modems, software, etc.)
- Extended warranties (90 day and 12 months; subject to prior inspection)

OUR STORY IS NEVER ENDING!

MISSION PEAK SYSTEMS

3514 Arden Road, Hayward, California 94545 • (415) 887-0756

ANNOUNCING KAYPRO

AUTHORIZED SERVICE

Now one of the most popular and critically acclaimed computers on the market is supported by the highly respected service department of MISSION PEAK SYSTEMS.

Repair, Upgrades and Service Contracts available for Kaypro users.

Dealers: Interested in becoming a Mission Peak supported Kaypro service center? Please call us.

MISSION PEAK SYSTEMS

3514 Arden Road, Hayward, California 94545 • (415) 887-0756

REVIEWS

BUSINESS SOFTWARE

WORD PROCESSING PRIMER PART II

By Kim Nelson

So far I've talked about mainly home-minded word processing programs which are used for home correspondence and casual writing. But what about the more business-minded applications? After all, the number of small businesses being run on a home computer is increasing daily. Thus, in this segment I will deal with the more powerful processors used on the bigger machines.

WordStar by MicroPro is undoubtedly the most widely known and most used program available for personal computers today, an industry standard which is available in almost any format. The program may be integrated with large variations of software; indeed, it seems that a large number of software manufacturers find it necessary to make their programs compatible with it. All the program's different functions are displayed on the screen in seven different menus, which can be called up by using control commands. This system tends to be a bit slower than the current one used by the more modern word processing software. The word processor comes complete with all the various edit and printer functions. I had no problem in getting it to work with my Epson compatible printer.

Although you can expect to start writing after a very short time, do expect to spend a good deal of time learning all the various functions such as merge. One nice feature is the new CorrectStar spelling check program which is a vast improvement over the original Spellstar. System requirements on the Apple are a minimum of 64K RAM, 80 column display, and CP/M compatibility. On the IBM, the basic 64K system is sufficient.

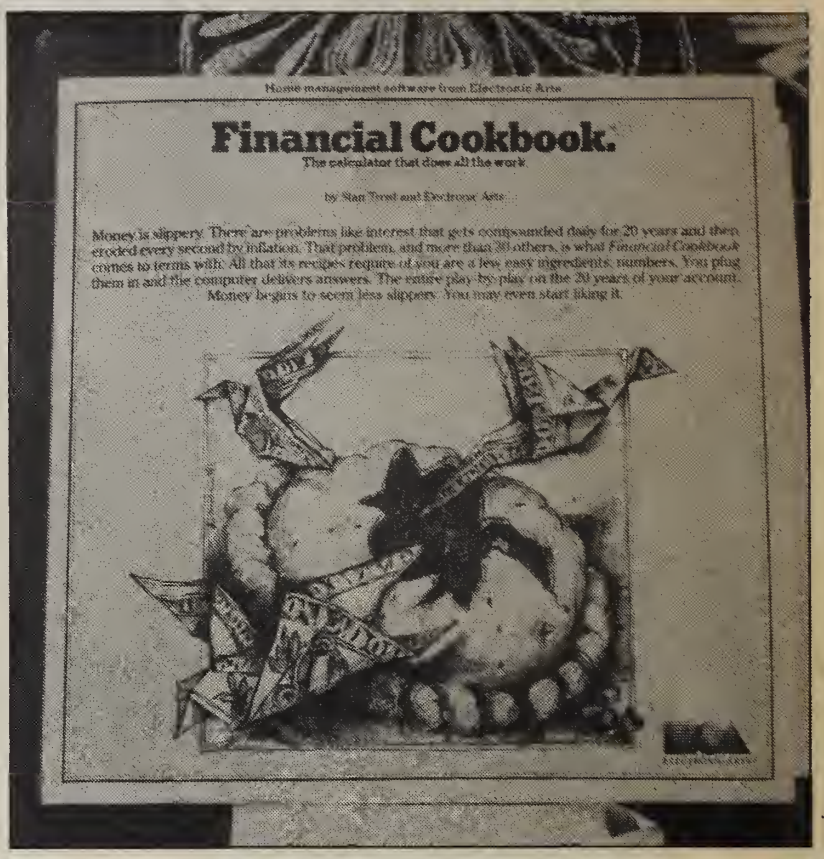
WordPerfect by Satellite Software International is a relatively new entry on the market which I heartily recommend. Again, it was designed for more serious writing and business application and has all the necessary accouterments you would expect. The supporting manuals are well written and organized, and there is an accompanying overlay which delineates the various keyboard functions.

Now for the fun stuff! The program includes true proportional spacing and a four function math package. My favorite, though, is the internal spelling checker which allows you to check spelling without exiting the word processor. It includes a dictionary with over 30,000 words, and you may add an additional 10,000 words if you wish. For the program to work, you will need 128K RAM and two disk drives. On the Tandy 2000, you will need 256K Ram. For those of you interested in writing letters, you will be happy to learn that there is a mail merge with its own data base built in to accommodate you. The data base is very simple, and don't expect fancy sorts — but it does the job.

DisplayWrite II is, according to IBM, the closest thing that you can get to a dedicated word processing machine on a PC. There is a great deal of similarity between this program and *WordPerfect*. One big advantage that the *DisplayWrite* program has is that it sells for approximately $200.00 less than *WordPerfect*. *DisplayWrite II* is actually part of a series which is comprised of *DisplayWrite I*, *Display Write II*, *DisplayWrite Legal Support*, and *DisplayCom*. *DisplayWrite I* is an easy to learn, entry-level word processor designed to help users become familiar with the world of word processing and at the same time still be functional. *DisplayWrite Legal Support* is a specialized version of *DisplayWrite II* which will do the added functions required in legal applications such as automatic line numbering. *DisplayCom* is a Bisync communications package which allows you to communicate and transfer files to mainframes and other PCs.

DisplayWrite II does an excellent job of being a powerful word processor yet still remains user friendly and productive. It has the nice feature of being able to merge with *Lotus 1-2-3* and use its graphic modes. It has no graphic capability of its own, unlike its predecessor *DisplayWrite I*. It includes a variety of text functions and will support the letter-quality modes of various dot-matrix printers. *DisplayWrite II* will also do four function math, global search, fore-and background print and includes a dictionary of over 100,000 words. It runs on any PC or PC compatible with at least 192K RAM and two disk drives.

— Kim Nelson


Home management software from Electronic Arts
Financial Cookbook.
The calculator that does all the work
by Stan Trost and Electronic Arts
Money is slippery. There are problems like interest that gets compounded daily for 20 years and then eroded every second by inflation. That problem, and more than 30 others, is what Financial Cookbook comes to terms with. All that its recipes require of you are a few easy ingredients: numbers. You plug them in and the computer delivers answers. The entire play by play on the 20 years of your account.
Money begins to seem less slippery. You may even start liking it.

FINANCIAL COOKBOOK

Program Design by: Stan Trost and Electronic Arts
Published by: Electronic Arts
For: Apple II, II+, IIe, IIc (64K), Mouse Optional

If you're like most of us "non-financial home managers," and your Fundamentals of Managerial Finance book is living in a box in the garage, then this program can help. If you have ever tried to remember the equation for calculating compound interest, future value of

today's dollar, or present value of an annuity, but failed, how about a program which allows you to just fill in the blanks and let your computer do the tedious calculating?

The *Financial Cookbook* contains such appetizing recipes as mortgage schedules, living from an IRA, mortgages with balloons, buying a car, refinancing your home and how much life insurance you need. The program contains 32 different recipes that produce answers about money matters. Tax savings are especially well covered in *Financial Cookbook*, which covers 11 basic tax shelters available to most consumers.

The program is simple to use and a complete instruction manual with a 100 item index accompanies the program.

— Pat Hamilton

THE PRINT SHOP

Design and Development by: David Balsam
Programming and Graphics by: Martin Kahn
Published by: Broderbund Software, Inc.
For: Apple. Requires at least 48K of memory and one disk drive. Compatible with most dot matrix printers.

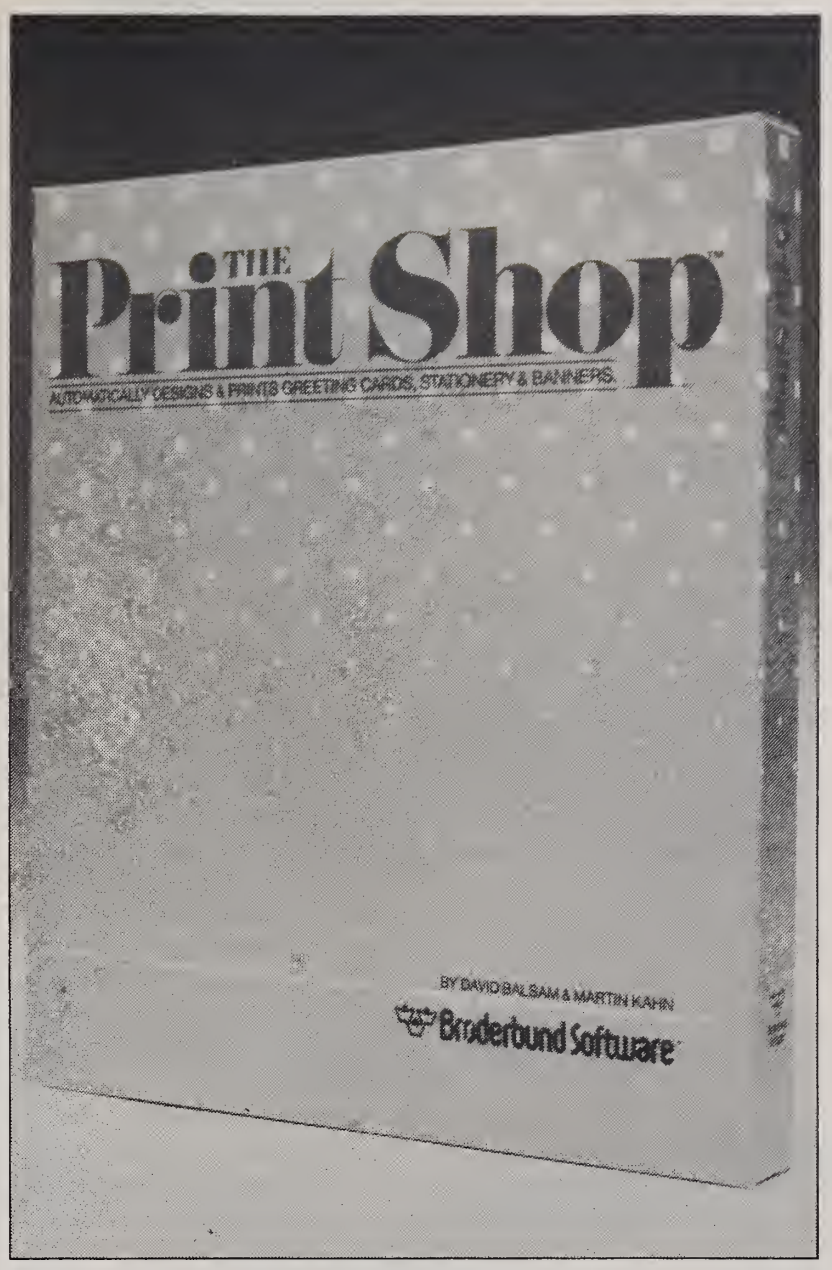
Broderbund's new *Print Shop* is one of the neatest products for Apple owners in a long time. It is both useful and fun, a rare combination in the world of microcomputer software.

Print Shop is a printing utility that lets you create greeting cards, signs, huge banners and letterheads using a wide variety of type styles and graphics. The first page of the well-designed reference manual promises: "The Print Shop is so easy to use, you don't need to read this manual. Just start up the program and follow the prompts. You'll be printing in minutes!" You should probably read the first few pages anyway, just to be sure you set up the program correctly; but in general, the clear, logical menu-driven program and a handy two-sided reference card are all you will ever need.

An installation menu prompts you through a series of questions on your printer and printer driver card, and how many disk drives you will be using (a second drive is handy, but not really necessary for this software, as there is little need for disk swapping). A single backup copy can be made, after which the built-in copy routine will not respond. The diskette itself is copy-protected. A colorful demonstration program is provided on the back side of the disk. Although *Print Shop* uses nice color graphics throughout its various screens, it looks perfectly good on a monochrome monitor.

A greeting card prints out on an 8 ½ by 11 inch sheet so that it can be folded in quarters, with a front page, an inside text page and a single credit line on the back. On my Epson MX-80 with a Wizard IPI interface card (and a well-worn year-old ribbon), the print quality was excellent. There are eight type fonts (upper-case letters only, plus digits and punctuation marks). A minor irritation is that each font has its own characteristic size, and different fonts cannot be mixed on a page. Sixty "canned" graphics can be incorporated into your creations in various sizes and layouts. These include cute animals, hearts and flowers, holiday symbols, and the beloved Apple logo. A simple graphic editor lets you create your own artwork, pixel by pixel, and store it to a formatted diskette. A function called "Screen Magic" displays shifting kaleidoscope patterns which can be "frozen" and printed out as background for text.

Banners of unlimited length can be printed out in letters about four to seven inches high, with graphics proportioned to match.


THE
Print Shop
AUTOMATICALLY DESIGNS & PRINTS GREETING CARDS, STATIONERY & BANNERS.
BY DAVID BALSAM & MARTIN KAHN
Broderbund Software

The user interface for *The Print Shop* is friendly and flexible. Menu items can be selected using the keyboard, a joystick or the Koala Pad. I used a Kraft joystick and found it extremely handy for moving around on the screen, after a bit of practice to create and edit graphics.

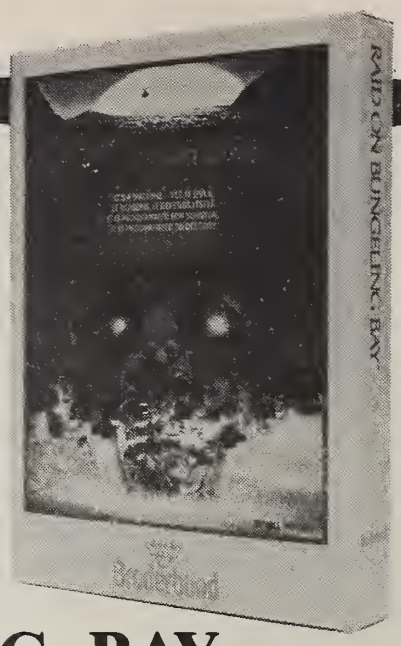
The Print Shop is packaged in a big yellow box which includes a supply of bright red pin-feed paper, some card-sized envelopes, some examples of greeting cards, the program diskette, manual and reference card. A thoughtful touch is a printed stick-on label for your backup copy.

Since it may take quite a few minutes for *Print Shop* to print out a large or complex design, multiple copies of the same item are not really practical. The manual suggests making one master and running off additional copies on a copier machine. Products like *The Print Shop* represent a real revolution in our ability to create powerful, effective visual statements in text and graphics. For those who love careful hand-lettered products, this is a sad development perhaps, but given the continuing decline of penmanship, it was probably inevitable. *The Print Shop* lacks the capabilities of a full-featured graphics editor, such as the ability to vary sizes, textures and orientations on the page, but for the price, it is an excellent value. If you ever need to send personalized greeting cards, make up signs, or publish a newsletter or bulletin, then this product is a winner.

— Mike Markowitz

REVIEWS

GAME SOFTWARE



RAID ON BUNGELING BAY

Designed by: Will Wright
Published by: Broderbund
For: Commodore 64, joystick or keyboard

The game map reveals a "small planet in a remote corner of the universe" where the evil Bungeling Empire is making "the War Machine." Your task in this game is to destroy the Bungeling factories. The battle is fought over a very realistic arcade-like map with your helicraft. This looks much like an army attack helicopter, and is armed with an infinite number of rockets that fire forward and can destroy most targets — except factories. It can also carry nine bombs. Bombs are reloaded at your aircraft carrier. They may be found other places, however, so look around.

The aircraft carrier steams between the islands and waits for you to return and land to restock your bombs and repair damage. If the carrier is attacked by enemy bombers, you must return and attack the bombers until they are destroyed. Failure to defend your carrier will result in an early termination of the game. A message will be flashed at the bottom of the screen if the carrier is under attack.

The scrolling map is dazzling! Anti-aircraft guns fire at you as you pass by their positions. The gun turrets turn with you and fire after tracking. The projectile can be seen from the gun muzzle until it contacts you or self-destructs in a small fire burst after a short time in flight. The game has 100 screens that scroll as you fly over the surface of the planet.

The joystick gives the feel of flight control to the game. When you push the joystick, the craft begins to accelerate. When you steer right or left, the craft begins to turn in the respective direction, but you must keep the stick forward to accelerate in the chosen direction. When the stick is pulled back, the craft slows, and if it's held back, the craft will stop and begin to back up.

The big points in this game are made by blowing up the factories. As you destroy the factories, your opponent becomes more aggressive. As you crush the factories into dust with your bombs, you will notice they quit emitting smoke from their stacks. This means they are about to detonate and be removed from the game. You only carry nine bombs and sometimes run short. If you return to your carrier for more and dally about shooting boats in the waters, on your return you may find the factory rebuilt and smoking again. They repair themselves if left unattended and not completely destroyed.

As more of the factories are destroyed, you will find the enemy becoming more aggressive. Each factory is progressively more difficult to destroy. At first, your helicraft will be able to hover above and bomb away. After you have taken out a factory or two, you will be attacked by the enemy aircraft furiously and relentlessly. If you don't break off the attack, or bomb in sweeping passes, you will be destroyed. As the game progresses, the missiles fired by the fighter aircraft will begin to seek your craft and become very difficult to evade.

To add to your problems, a battleship is being built to destroy your aircraft carrier, but it can be delayed by bombing it. Attention to detail is important throughout the game.

The game is tough to beat; it requires you to think ahead and have a plan before you start. *Raid on Bungeling Bay* is the arcade-come-home computer "Shoot-'em-up" we all have been waiting for.

— Don Hamilton

BOOKS

SO YOU ARE THINKING ABOUT A SMALL BUSINESS COMPUTER...

R. G. Canning and N. C. Leeper
1982-83 Edition
Publisher: Prentice-Hall, Inc.

The title tells the whole story. If you, like thousands of others, are looking for the right computer for your business, you should consider reading this book before you buy.

The book gets down to basics. "What will the computer do for me?" is a question frequently asked, even by people somewhat familiar with computers. "How do computers work?" "What are hardware and software?" "Should I hire a consultant?" "How much memory will I need?" These are some of the pertinent questions this publication answers.

This is also a workbook and can be used to generate a needs analysis chart to calculate the optimum hardware and software to meet your personal requirements. After creating the chart, you attempt to match the available computers and software to the calculated optimum system.

Most people don't know where to begin when deciding which computer to purchase. Arm yourself with the information in this book and then ask your local computer/software dealer for further advice.

— Don Hamilton

TROUBLESHOOTING AND REPAIRING PERSONAL COMPUTERS

Art Margolis
Tab Books, Inc.
1983

One of the greatest nightmares of any computer owner is to have to open up the case of a "dead" computer and try to figure out the

nature of its problem(s). I've spent my share of time building and servicing board-level microcomputers, but I still have a tough time not getting frustrated at the rows of dark, monolithic computer chips that make up the bulk of today's microcomputers. Up until now, if you wanted to troubleshoot or repair your own computer, you really needed several college courses and a small fortune in test equipment. Let's face it, most people simply don't have, or for that matter want, a degree in microcomputer engineering. This has put most "non-computer" people at the mercy (and scruples) of dealers and other service people who just seem to speak in another language.

In a noble, and largely successful, effort, Art Margolis has authored a very basic primer on microcomputer troubleshooting and repair. This clearly-written, well-illustrated book takes the electronics neophyte through almost every facet of the mystical world of computer circuitry. Areas covered include trouble analysis, computer system layout, chip types and locations, simple maintenance tools and techniques, and a variety of other topics. All are covered clearly with excellent examples and (for the more juvenile among us) lots of big, clear pictures.

While the book lives up well to its title, its real value lies in its excellent descriptions of how microcomputers work. Even if you never plan to break the factory seals on your machine, this book is worth reading just to improve your understanding about computer systems in general. At $13.95, it is a real bargain.

— John D. Gresham

HARDWARE AND PERIPHERALS

MICROBITS PERIPHERAL PRODUCTS 1150 PARALLEL PRINTER INTERFACE

Basically put, the MPP 1150 interface is a thoughtful alternative to an Atari 850. It handled everything I put to it, including customized text and graphics. MPP promises a 64K printer buffer which will list for $149.95 when it becomes available. I would sooner look for their 1152 2K buffer with a list price of $14.95, which is now available. The 1150 should be just right for those of us who wish to use our systems merely for word processing; it has all the printing capabilities of the Atari interface without the Atari's $199 price, plus $40 for a printer cable. With a list price of $99, the MPP 1150 is a Scrooge's dream.

With a little tinkering, the MPP 1150 will even work on the temperamental Atari 1200 XL. You pay for shipping to MPP (about $5), they will attach a power cord and ship it back to you at no charge. They did it for me in five working days (they must have wanted a good review!). But they say they'll do the same for you. For all Atari owners who just want to run their printers, the MPP 1150 does the job for half the price of its Atari counterpart.

— Randall C. Dennis

User Groups • Used Computers
Make Friends & Influence People

MICROTIMES™
Classifieds
Work
For FREE

see page 28

INTRODUCING . . .
A New Concept in
Computer Use

Computermat™
Microcomputer Workcenter

Use Our Computers
By The Hour In Our Workcenter For A
Fraction Of The Cost of Owning One!

YOU CAN DO:

- Mailing Lists
- Reports & Documents
- Graphics & Charts
- Accounting & Bookkeeping
- Financial Analysis
- Review of Software

AND MORE!

Become productive immediately! Many people without computer experience have been able to get right to work with a little help from us. Our staff is always available to answer questions.

$7.50/HR INCLUDES USE OF:

- Computer, Matrix Printer, and Software
- Letter Quality Printers Available For $10.50/HR
- One to One Tutoring, Consulting and Job Set-Ups Also Available for $25/HR Each Plus Rental Time

(818) 348-3601

Hours-Mon -Sat 10AM-10PM
Sun 11AM-4PM

20037 Ventura Blvd #204
Woodland Hills, CA 91364

CLASSIFIEDS

SOFTWARE FOR SALE

SOFTWARE BROKERS
Get discount prices on a complete line of software for Apple, Atari, Commodore 64, IBM, and Mac computers. Give us a chance at giving you lower prices. Call your SB agent today (415) 571-8787.

PROFESSIONAL TIME & BILLING
Desktop Time & Billing provides management control of unbilled time, A/R, cash flow. Integrates with Desktop G/L! For free literature and sample report call 800-832-2244; CA 800-732-2311.

COLOR COMPUTER SOFTWARE
Over 150 titles in stock! Books and magazines too. Welcome to browse or try software. Downtown LA, convenient location. (213) 483-8388, ask for Dan. 1316 Wilshire Blvd., Suite 206, Los Angeles 90017.

COMMODORE AND APPLE SOFTWARE
Commodore: Hard Hat Mack, Exodus 3, Archon. Apple: One-on-One, Ms. Pac-Man, all Wizardry and Ultimas!!! More! All Software only $10!!! Call (213) 378-7726, ask for Jenny.

HARDWARE FOR SALE

TRS COLOR COMPUTER DISK
Monitor, printer, 3 softwares; sac. $900. (415) 441-7215.

HONEYWELL 64K COMPUTER
Runs CP/M w/2 double/quad density floppy drives—each 900K. Comes with all software: Wordstar, Mailmerge, GL, AP, AR, Payroll, Inventory, Supercalc, dBase II, Taxes, more. Must sell (415) 235-1598. David.

WANTED

DIRECT SALES REPS WANTED!
Fast growing East Bay computer sales organization looking for young men and women for entry level direct sales positions — call Linda for info (415) 526-4881.

VIDEO CASSETTE RECORDER WANTED!!
Not working model ok! Reasonable. Write: Joe, P.O. Box 262, Glendale, CA 91209.

PERSONAL

FREE AIR TRAVEL!
Become an independent courier for major company. 100's of free or discounted flights. (213) 597-2485.

MicroTimes offers a free listing service for user groups.
See page 29 for more information

Have you outgrown your old computer? Is that video game not as much fun as it used to be? Looking for a good deal on used equipment?

Well, if so, this is your chance. Fill out the coupon below, send it to us by November 20, and we'll run your ad in the December MicroTimes free of charge!

Please specify the category you'd like your ad to run in. And to make life easy on your potential respondents, please include your *full* address and phone number.

Categories: (check one)

☐ Hardware For Sale ☐ Software For Sale ☐ Wanted ☐ Personal ☐ Services

☐ Will Trade ☐ Equipment ☐ Video

Large Headline:

Cost of ad FREE!! X number of issues to run 1 = Amount Enclosed 0

Send check, money order, Visa or MasterCard

☐ Visa ☐ MC

Card # _____

Exp. Date _____ FREE!!

Signature _____

Advertiser's Name _____

Street Address _____

City _____ State _____ Zip _____

Phone (_____) _____

Send to: **MicroTimes Classifieds**
1800 N. Highland Ave. #220, Hollywood CA 90028 or 5951 Canning St., Oakland CA 94609

Here's my Free user group listing

User group name _____

Contact name _____

Address _____

Phone number _____

Text of ad _____

_____

_____

_____

_____

Meeting address _____

Meeting time and date _____

Mail to: **MicroTimes User Group Listings**
1800 N. Highland #220
Hollywood, CA 90028
or
5951 Canning Street
Oakland, CA 94609

FREE USER GROUP LISTINGS

MicroTimes is a new, free computer magazine with a current monthly distribution of 100,000 copies in Northern and Southern California. In addition to interviews, features and reviews, we offer a free listing service to user groups, bulletin boards and computer associations. Let us hear from you. Use this coupon for your listing, and feel free to include any additional information for our newsreels column. Our next issue will be December, so please send us your info by the third week in November.

YES!!
California has needed a magazine for computer users and Microtimes is it!
Send me the next 12 issues for $12.

☐ cash enclosed ☐ charge card

Visa/Mastercard # _____

Expires _____

Signature _____

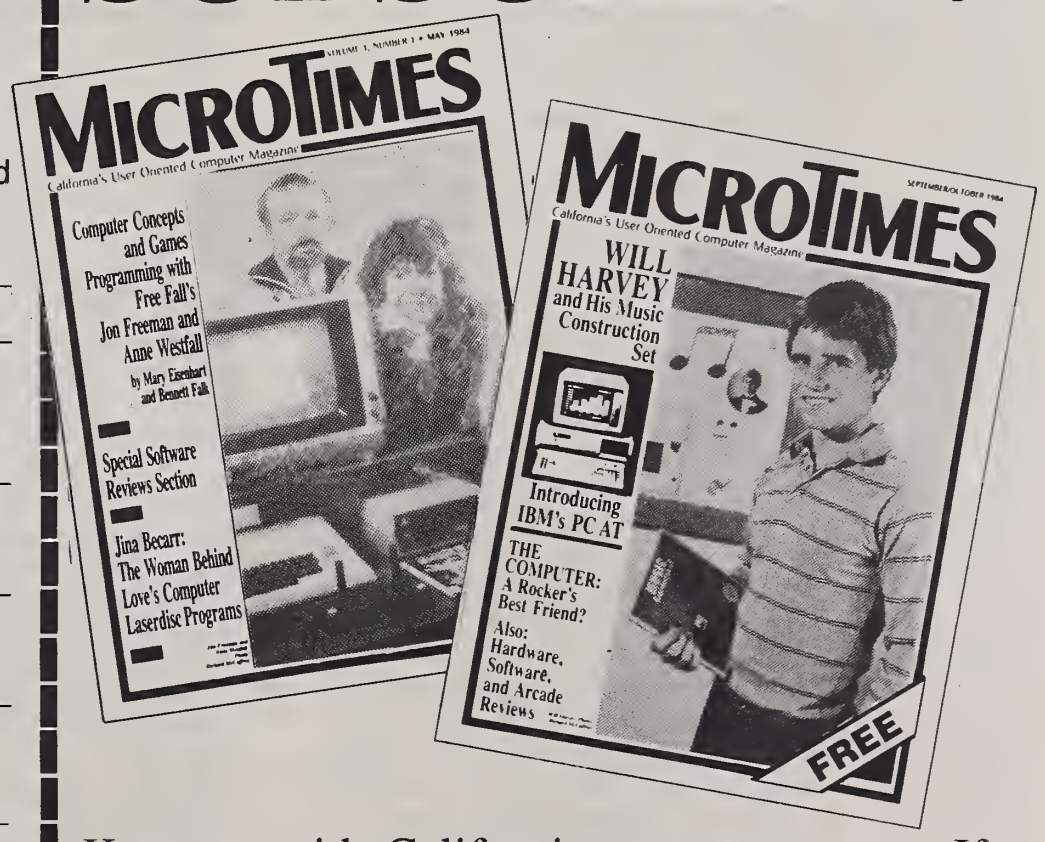
Name (please print) _____

Address _____

City _____ State _____ Zip _____

Mail to: MicroTimes Subscriptions
1800 N. Highland #220
Hollywood, CA 90028
or
5951 Canning Street
Oakland, CA 94609

SUBSCRIBE!


MICROTIMES
California's User Oriented Computer Magazine
Computer Concepts and Games
Programming with Free Fall's Jon Freeman and Anne Westfall
by Mary Eisenhart and Bennett Falk
Special Software Reviews Section
Jina Becarr: The Woman Behind Love's Computer Laserdisc Programs
MICROTIMES
California's User Oriented Computer Magazine
WILL HARVEY and His Music Construction Set
Introducing IBM's PC AT
THE COMPUTER: A Rocker's Best Friend?
Also: Hardware, Software, and Arcade Reviews
FREE

Keep up with California computer news. If you're having trouble finding MicroTimes in your area, get your own personal copy delivered by mail.
Only $12 for 12 issues.

USER GROUP NOTES

The **West Coast Commodore Association** is planning a convention for February 1985 in San Francisco. Featured at the two-day exhibit will be vendors of software and peripherals as well as speakers on topics of interest to C-64 and VIC20 owners. Both current owners and those who find Commodores under their Christmas trees will find lots of nifty ideas and new developments for maximizing their machines' capabilities. Interested user groups and vendors should contact the Association for information: West Coast Commodore Association, Inc., P.O. Box 210310, San Francisco, CA 94121 (BBS phone 415-567-5046).

Meanwhile, the irrepressible **Club of HP Handheld Users** (who live by the motto "After you Byte, you CHHU") is looking for new members. CHHU is a non-commercial, member-supported organization which publishes its own hefty magazine ten times yearly for new and veteran HP users. The club accepts no advertising in its newsletter and remains committed to the free exchange of information and programs among members. If you work with an HP handheld or are thinking of buying one, CHHU may be for you. For information, send SASE (wtih $.54 postage) to: CHHU, 2545 W. Camden Place, Santa Ana, CA 92704.

Texas Instruments may have lost interest in the TI 99/4A, but the machine still has some passionate devotees out there. If you have a TI 99 and are wondering where you go from here, contact Terrie Masters, President, L.A. 99er Computer Group, 148 S. Maple Dr., Beverly Hills, CA 90212.

Also on the Computer-That-Refused-to-Die front, **Timex-Sinclair** aficionados have three mutual-assistance clubs in the Bay Area. According to Rick Link of the East Bay group, Timex itself may be out of the picture, but a lot of software and books are still being produced for its computers; besides, the popular British Sinclair SPECTUM is a close cousin of the Timex 2068 and the two machines' software is usually compatible. The local groups serve as a support system for members, exchanging information on hardware and software, troubleshooting and programming tips. So if you bought one of those computers on closeout at Payless and don't know what to do with it, give your local group a call (see listings below for individual club info).

East Bay FOG (First Osborne Group) meets the second Wednesday of each month at 2832 Ford Street in Oakland (near the Fruitvale Bridge). It features an extensive software library for Osborne I and Executive models and is now adding titles for Morrow and Kaypro. A workshop precedes each meeting, from 6 to 7:30 pm, for problem-solving, sharing ideas and copying public domain software; the meeting itself features speakers of interest to the Osborne Community. Call (415) 834-7897 for more info.

And, if you're wondering about some of the long-range implications of the Computer Revolution, you're not alone. **Computer Professionals for Social Responsibility** is a national organization headquartered in Palo Alto; it publishes a monthly national newsletter discussing computer-related issues ranging from privacy to artificial-intelligence-based defense programs to medical side effects of VDTs. Various local groups statewide meet to discuss topics of interest to members. For further information write CPSR, Box 717, Palo Alto, CA 94301, or call (415) 322-3778.

MicroTimes wants to hear from you about your club or user group, its activities and upcoming events. Write or call us: MicroTimes User Groups, 5951 Canning St., Oakland, CA 94609, (415) 652-3810. Also, don't forget our free user group listings.

USER GROUP LISTINGS

South Bay Apple III User Group
The Apple III is alive and well in Southern California. Come join us on the IIIrd Tuesday of each month. Product demos and discussions and more. Meeting address 1000 Victoria Avenue, Room #SC-E157, Carson, 7:30 pm, IIIrd Tuesday. Contact Gary, P.O. Box 432, Redondo Beach, CA 90277, (213) 316-7738.

South Bay Victor*Group
The South Bay Victor*Group meets at 7 pm at Computer Insights, 40957 Grimmer Blvd., Fremont, CA. Public domain software is usually available. Meetings are the first Tuesday of the month. Contact John Kimber, 38635 Drexel Court, Fremont, CA 94536, (415) 797-6423.

San Francisco Victor*Group
The San Francisco Victor*Group meets at 4 pm the third Sunday of each month at LaBettola di Adolph Restaurant, corner of Broadway and Montgomery. Come early for public domain copying. Contact Darrell Bross, 254 Winding Way, San Francisco, CA 94112, (415) 586-5788.

East Bay Victor*Group
The East Bay Victor*Group (for users of Victor 9000's and ACT Apricot machines) meets at 7 pm the second Wednesday of every month at Monarch Computers, at 863C San Pablo Ave., Albany, CA. Public domain software usually available.

East Bay Timex/Sinclair User Group (EBZUG)
Timex/Sinclair user group. S/W library and newsletter. Meets at West Branch of Berkeley Public Library at corner of University and San Pablo. Meets 3rd Tuesday of the month at 7:30 pm. Contact Rick Link, 654 40th St., Richmond, CA 94805, (415) 234-3310.

Peninsula Timex/Sinclair User Group (PUG)
Timex/Sinclair user group. S/W library and newsletter. Meets at Peninsula Hospital, 1783 El Camino, Burlingame. Meets 3rd Sunday of the month at 1 pm. Contact George Mockridge, 263 Gateway #107, Pacifica, CA 94044, (415) 359-3198.

Silicon Valley Timex/Sinclair User Group (SVTSUG)
Timex/Sinclair user group. S/W library and newsletter. Meets at Dysan Corp., 5201 Patrick Henry Drive, Santa Clara. Meets last Tuesday of the month at 7 pm. Contact Rita Carr, P.O. Box 4133, Santa Clara, CA 94044-0133, (408) 738-2888 ext. 45.

North Bay R2E
Forming user group for R2E System Microcomputer users. Please call (415) 235-1598 for information. First meeting will be held in El Cerrito in early November.

LA 99er Computer Group
TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3031 Torrance Blvd., Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

San Francisco Commodore Users Group
Public domain library, classes, tech help, in-depth demonstrations, monthly newsletter, Epromer, savings on purchases, all this and more. BBS # (415) 567-5046 300 baud. Meeting address 256 Laguna Honda Blvd., San Francisco, 3rd Tuesday of the month, 7:30 pm. Contact Roger Tierce, 278 27th Ave. #102, SF, CA 94121, (415) 387-0225.

Club of Hewlett-Packard Handheld Users (CHHU)
The true personal computer is small enough to always be conveniently with the user. CHHU, pronounced "chew," is dedicated to the ultimate personal computer. Membership is $30/yr. You will receive 10 issues of the CHHU Chronicle. Meetings are announced in the CHHU Chronicle, or contact Richard J. Nelson, 2545 W. Camden Ave., Santa Ana, CA 92704, (714) 754-7757.

Computer Professionals for Social Responsibility
P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

Computer Professionals for Social Responsibility (East Bay)
902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

READ THIS OR DIE!!!

COMPUTERS

IBM PC 64K/1 FLOPPY	$ 1,390.
IBM PC 64K/2 FLOPPIES	$ 1,520.
IBM PC 256K/1 FLOPPY	$ 1,499.
IBM PC 256K/2 FLOPPIES	$ 1,629.
IBM PC 256K/1 FLOPPY/10MB HD	$ 2,319.
IBM PC 256K/2 FLOPPIES/10MB HD	$ 2,439.
IBM XT 256K	$ 3,395.
IBM PC/AT	$ 5,595.
IBM DOS 2.1	$ 59.
SANYO 550-2 W/5 SOFTWARE + MONITOR	$ 869.
SANYO 555-2 W/8 SOFTWARE + MONITOR	$ 1,249.
COLUMBIA VP 256K W/SOFTWARE	$ 1,995.
COLUMBIA 1600-1 512K W/SOFTWARE	$ 2,495.

SANYO 555-2 PACKAGE SPECIAL
256K RAM, TWO (2) DS/DD 360K DRIVES, ONE (1) AMBER MONITOR, WORDSTAR, CALCSTAR, EASYWRITER, DOS 2.11, GW BASIC, DATASTAR, REPORTSTAR, MAILMERGE/SPELLSTAR, AND THE TELETEX TTX-1014 LETTER-QUALITY PRINTER
ONLY $1,599.

*WE WILL TRY TO BEAT ANY ADVERTISED PRICE FOR ANY SANYO SYSTEM FROM ANY DEALER IN THE WHOLE UNITED STATES!!!!!!!

PRINTERS

EPSON RX-80	$ 249.
RX-80F/T	$ 299.
FX-80	$ 419.
RX-100	$ 459.
FX-100	$ 619.
LQ-1500	$ 995.
LQ-1500 INTERFACE	$ 70.
STAR MICRONICS	
GEMINI 10X	SOLD OUT!!!!
GEMINI 15X	$ 349.
DELTA 10	$ 359.
DELTA 15	$ 549.
RADIX 10	$ 549.
RADIX 15	$ 599.
RADIX-15PC	$ 649.
POWERTYPE (LETTER QUALITY, 18 CPS)	$ 339.
NEC AND DIABLO (ALL MODELS)	$ CALL
JUKI 6100	$ 437.
JUKI 6300 (40 CPS)	$ 849.
OKIDATA 92P	$ 395.
OLYMPIA COMPACT NP	$ CALL
COMPACT RO (LETTER QUALITY, 14 CPS)	$ 399.
TELETEX TTX-1014 (LETTER QUALITY, 14 CPS)	$ 319.
TTX-2064 64K PRINTER BUFFER	$ 199.
TOSHIBA P1340	$ 795.
P1351	$ 1,390.
TAXAN 500 64K PRINTER BUFFER	$ 219.
IBM PRINTER CABLE	$ 18.
APPLE IIC PRINTER CABLE	$ 21.

NOTE: STAR MICRONICS PRINTERS HAVE BETTER FEATURES THAN THE COMPETITION, AND COME WITH A FULL-YEAR WARRANTY!!! SO PLS. CALL TO FIND OUT THE STUNNING DIFFERENCES.

MONITORS

PRINCETON GRAPHICS	MAX-12	$ 189.
	HX-12	$ 459.
TAXAN	TXN-122	$ 139.
	TXN-420	$ 426.
	TXN-440	$ 585.
SAKATA	SA-1000	$ 109.
	SG-1000	$ 99.

SMORGAS "BOARDS"

IBM MONOCROME/PRINTER ADAPTER	$ 229.
PC PEACOCK COLOR GRAPHICS	$ 229.
AST SIXPAKPLUS 64K/384K	$ 253./$CALL
TECMAR GRAPHICS MASTER	$ 495.
EVEREX GRAPHICS EDGE	$ 399.
EVEREX MAGIC CARD 64K/384K	$ 249./$419.
PLANTRONICS COLORPLUS	$ 379.
8087-3 NUMERIC MATH CO-PROCESSOR	$ 169.

64K RAM CHIP SET (150NS)
ONLY $30.00

64K RAM CHIPS (150NS) DISCOUNT SCHEDULE

QUANTITY	
1-200	$ 3.35.
201-450	$ 3.20.
451-700	$ 3.05.
701-999	$ 2.90.
1000-up	$ 2.75.

*WHILE SUPPLY LASTS

CP/M Z-80 CARD FOR APPLE II/IIE	$ 75.
80-COLUMN BOARD FOR APPLE II/IIE	$ 99.
DUMPLING-GX	$ CALL
GRAPPLER PLUS	$ 115.
PARALLEL PRINTER CARD FOR APPLE II/IIE	$ CALL

HARD DISK DRIVES/FLOPPIES

IOMEGA BERNOULLI BOX	$ 2,895.
EVEREX COGITO 10MB INTERNAL	$ 789.
PIGGYBACK 40-WATT POWER SUPPLY	$ 150.
TALLGRASS (ALL MODELS)	$ CALL

10MB & 30MB EXTERNAL HARD DRIVE SPECIALS
DATAMAC TRUSTOR 10 AND/OR TRUSTOR 30
COMPLETE W/ ENCLOSURE, POWER SUPPLY, XEBEC CONTROLLER BOARD (FOR IBM OR APPLE), & SOFTWARE, **ONLY $ 995. FOR 10 MB**
ONLY $1,995. FOR 30 MB

TEAC DS/DD 360K DRIVE FOR THE IBM	$ 129.
SANYO DS/DD 360K DRIVE W/ SOFTWARE	$ 249.
TANDON 100-2 360K DRIVE FOR THE IBM	$ 169.
APPLE-COMPATIBLE HALF-HEIGHT DRIVES	$ 169.
ORIGINAL IBM FULL-HEIGHT 360K DRIVES	$ 189.

PRINTER RIBBONS

EPSON MX/RX/FX-80	$ 29./6
EPSON MX/RX/FX-100	$ 44./6
OLYMPIA COMPACT NP	$ 29./6
NEC 5500/7700 SERIES (NYLON)	$ 29./6
NEC 5500/7700 SERIES (MULTI/STRIKE)	$ 27./6
NEC 8023A	$ 29./6
DIABLO 630 SERIES	$ 22./6
JUKI 6100	$ 12./6
OKIDATA 90 SERIES	$ 15./6
OKIDATA 84 SERIES	$ 22./6

TERMS:
1. ALL PRICES REFLECT A CASH DISCOUNT OF 3%.
2. ADD 3% FOR VISA OR MASTERCARD.
3. FOR SHIPPING/HANDLING, ADD $10.00 FOR SYSTEMS, MONITORS, PRINTERS AND HARD DISKS. OTHERWISE, ADD ONLY $5.00 PER BOX!!
4. ADD 6.5% SALES TAX FOR ALL CALIFORNIA ORDERS.
5. ADD ANOTHER $5.00 FOR ALL COD ORDERS.
6. ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE.
7. CALL FOR CURRENT PRICES. THEY MAY HAVE JUST DECREASED!!!!!!

ACCESSORIES

KOALA SPEED KEY SYSTEM W/ TOUCH TABLET (MOUSE EMULATOR & FUNCTION KEYPAD)	$ 149.
COMPUGARD CPP-12 SURGE PROTECTOR	$ 39.
ROLLTOP DISK FILE (HOLDS 150 DISKS)	$ 29.
AMARAY MEDIA MATE 5 (HOLDS 50 DISKS)	$ 12.
KEYBOARD/DISK DRIVE COVER SET	$ 19.
IBM KEYBOARD STORAGE DRAWERS	$ 79.
BMC MONITOR BASE	$ 15.
DATA*GRIP COPY HOLDER	$ 25.
ANTI-GLARE SCREEN FILTER	$ 25.

DISKETTES

DYSAN SS/DD	$ 21.
DYSAN DS/DD	$ 29.
VERBATIM DATALIFE SS/DD	$ 19.
VERBATIM DATALIFE DS/DD	$ 25.
TDK SS/DD	$ 18.
TDK DS/DD	$ 24.
ELEPHANT SS/DD	$ 16.
ELEPHANT DS/DD	$ 21.

MODEMS

SIGNALMAN MARK XII MODEM	$ 276.
HAYES 1200B MODEM W/ SMARTCOM II	$ 398.
HAYES 1200 EXTERNAL MODEM	$ 479.

IBM SOFTWARE

FRAMEWORK (ASHTON-TATE)
dBASE III (ASHTON-TATE)
ONLY $369.00 EACH

dBASE II (ASHTON-TATE)	$ 295.
dBASE III UPGRADE KIT (ASHTON-TATE)	$ 137.
WORD PERFECT (SSI)	$ 295.
V*C*N EXECUVISION (PRENTICE-HALL)	$ 250.

MIND PROBER
(HUMAN EDGE SOFTWARE)
FOR APPLE, MACINTOSH, OR IBM
ONLY $29.00

SIDEWAYS	$ 39.
COPY II PC V1.9 (CENTRAL PT. SOFTWARE)	$ 24.
COPY II PLUS (FOR THE APPLE COMPUTER)	$ 24.
TYPING INSTRUCTOR (INDIVIDUAL SOFTWARE)	$ 39.
SET-FX+ (SOFTSTYLE)	$ CALL

COPYWRITE
BACKS-UP ALL IBM PC SOFTWARE WITHOUT ANY EXCEPTION, INCLUDING dBASE III, SYMPHONY, HARVARD PROJECT MANAGER, AND ALL OTHER PROLOK DISKETTES.
ONLY $50.00

FLIGHT SIMULATOR (MICROSOFT)	$ 34.
VOLKSWRITER DE LUXE	$ 179.

ZERO DISK
ALLOWS YOU TO RUN COPY-PROTECTED SOFTWARE FROM YOUR HARD DISK W/O HAVING THE SYSTEM DISK IN THE FLOPPY!!!
ONLY $75.00

(415) 591-1663

1501 EL CAMINO REAL
BELMONT, CA 94002

STORE HOURS
MON.-FRI. 10:00 to 7:30
SATURDAYS 11:00 to 5:00

sci tech SYSTEMS INC

SCI/TECH COMPUTER SYSTEMS

"DETERMINED TO BE BEST — DESTINED TO BE FIRST"

When It Comes To Saving On Software Only One Place Really Computes.

Now that you've spent a bundle on your personal computer, you're faced with yet another costly expense– the necessary software to make your home computer complete.

But thanks to The Wherehouse, your future software purchases don't have to be expensive. In fact, The Wherehouse can actually save you 25% to 60% on all your software needs.

And if you're not impressed with savings of 25% to 60%, feed a few of these other Wherehouse facts into your Apple, Atari, IBM or Commodore 64 and see how they compute:

- The Wherehouse softwhere departments have the largest inventory of entertainment, education and productivity software on the West Coast.
- The Wherehouse offers hassle-free self-service shopping in most locations.
- The Wherehouse has over 100 convenient locations throughout the Western United States.

So what's it going to be? Continue to pay higher prices at other software stores, or keep your computer satisfied with The Wherehouse's great selection and save 25% to 60%. Now, if that computes with you, then it's time to interface with your nearby Wherehouse– where we put the "where" in computer softwhere.

Wall To Wall Fun For All At

THE WHEREHOUSE

SIGHTS, SOUNDS AND SOFTWARE.

At Most Convenient Locations